ASBPE Magazine of the Year 2006

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Thornton A. May sees a big need for health care IT integration — into the larger IT community. PAGE 22

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Is political correctness driving you nuts? Here's what to do about it. PAGE 42

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SEPTEMBER 25, 2006 ■ VOL. 40 ■ NO. 39 ■ $5/COPY

Dunn Out at HP; Hurd Put On Hot Seat

CEO takes over as chairman, confirms role in misinformation campaign

BY PATRICK THIBODEAU

Hewlett-Packard Co. moved deeper into damage-control mode over its probe of leaks to the media last week, announcing late Friday that embattled Chairman Patricia Dunn had resigned from its board and confirming that CEO Mark Hurd had approved a misinformation campaign designed to help HP identify the source of the boardroom leaks.

HP, which previously had said that Dunn would step down as chairman in January but remain on its board, named Hurd to replace her as chairman, as planned.

In his first public comments about the boardroom scandal, Hurd said in a prepared statement at a press briefing that it was "proper and appropriate" for HP to investigate the media leaks. But in a second phase of the probe, he said, "processes broke down, and no one in the management chain, including me, caught it."

Hurd vowed that he would "take full accountability to get this right" and enable HP's management team to "get back to the job of running a business."

But Hurd, who didn't take any questions from reporters, likely will face a grilling at a congressional hearing this Thursday in Washington. HP said an offer by Hurd to appear at the hearing had been accepted.

HP, and Hurd, also still face an investigation by California attorney general Bill Lockyer. At this point, Lockyer doesn't have any evidence indicating that Hurd

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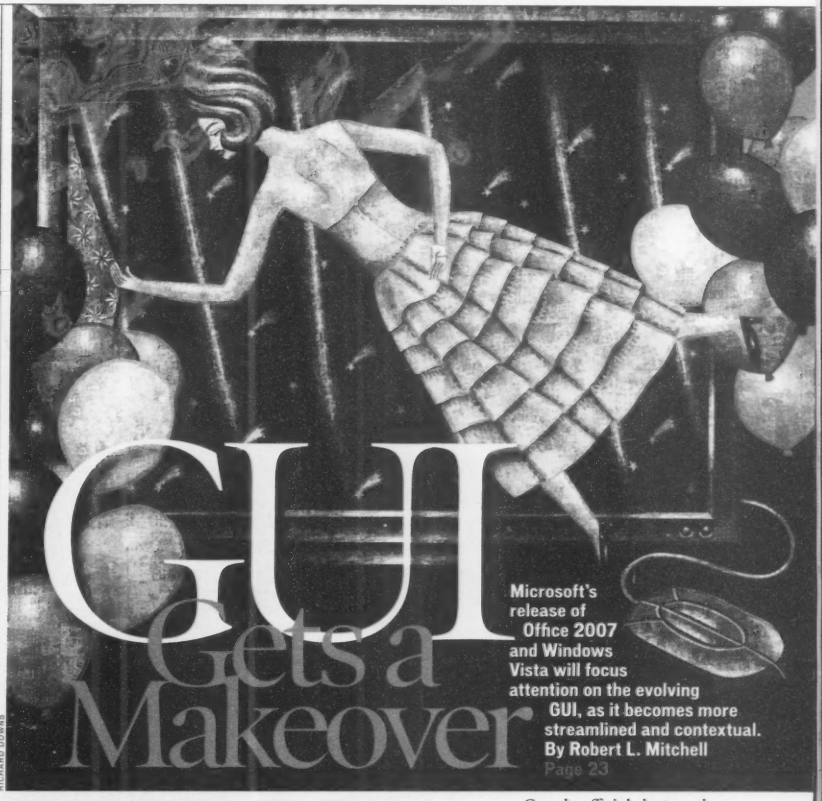
INSIDE

Survey: Board members support surveillance – if it's legal. PAGE 14

Editorial: HP's culture of evasion. PAGE 20

AP IMAGES

"Processes broke down" at HP, says CEO MARK HURD.



RICHARD DOWNS

GUI Gets a Makeover

Microsoft's release of Office 2007 and Windows Vista will focus attention on the evolving GUI, as it becomes more streamlined and contextual. By Robert L. Mitchell Page 23

Google Said to Be Testing Sun's Open-source Solaris

Technology may be alternative to Linux in server network, sources say

BY ERIC LAI

Google Inc. is experimenting with the open-source version of Sun Microsystems Inc.'s Solaris operating system as a possible prelude to running it alongside Linux in its massive global network of servers, according to sources.

With dozens of data centers housing hundreds of thousands of Intel servers supporting its flagship search engine, a move by Google toward Solaris would be a vote of confidence for Sun's operating system.

Google officials last week declined to comment on the company's OpenSolaris plans.

Sun CIO Robert Worrall said that Google is one of several large companies using open-source implementations of Solaris, including Solaris 10 and Solaris Express.

"Google, eBay, Yahoo — pick your favorite," said Worrall, whose internal IT team runs Solaris Express, the executable version of the OpenSolaris source code, on

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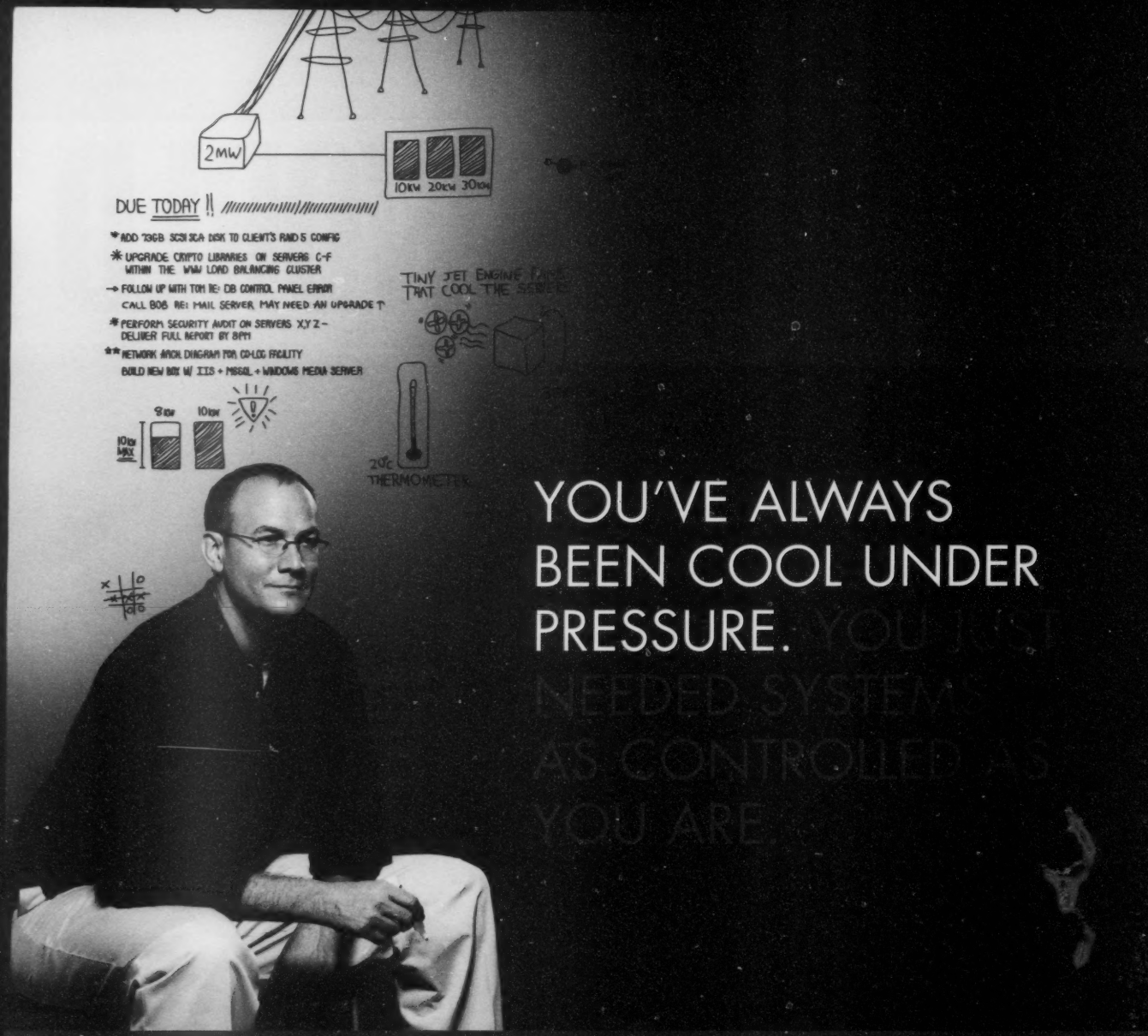
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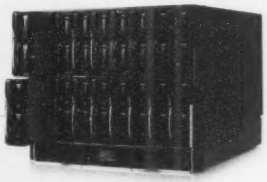

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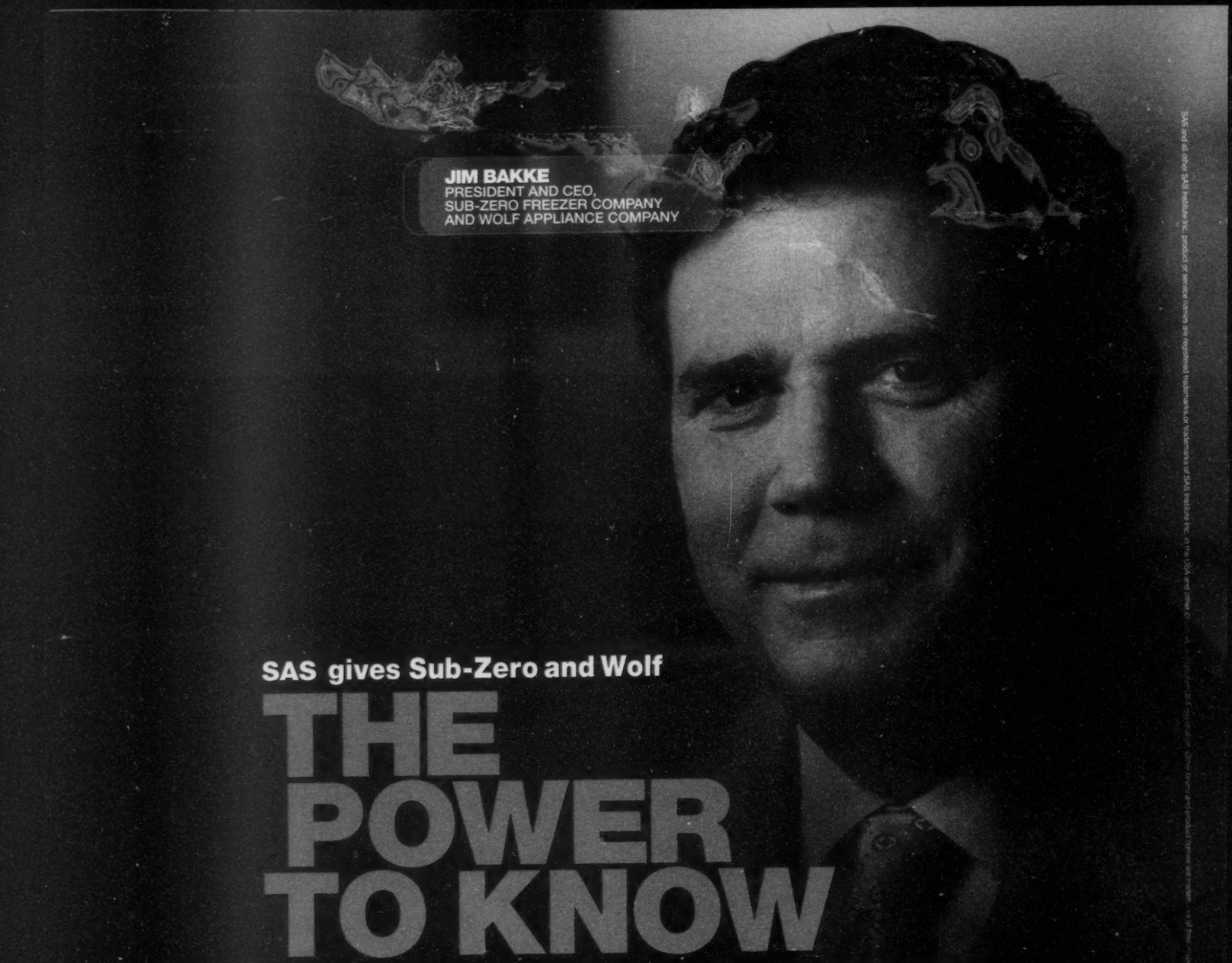

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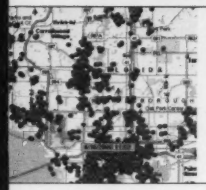
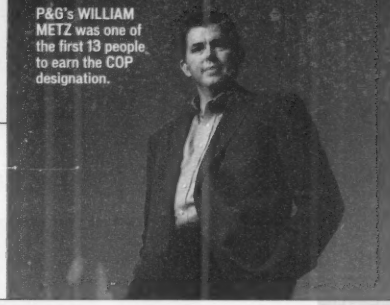


Geek's Garden
In the Technology section: This week's stroll through the technology landscape features real-time traffic maps, single-molecule transistors and 18th century animated dolls programmed to perform relatively complex tasks. **Page 31**



P&G's WILLIAM METZ was one of the first 13 people to earn the COP designation.

09.25.06

Certified Outsourcing Professional
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8 **IT execs hope** that emerging SOA tools can improve the often-thorny relationship between IT and business users.

8 **Motorola** plans to buy Symbol Technologies and make it "the cornerstone" of an effort to move into the corporate market for mobile and wireless technology.

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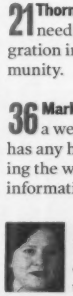

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AT DEADLINE

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HOUSTON

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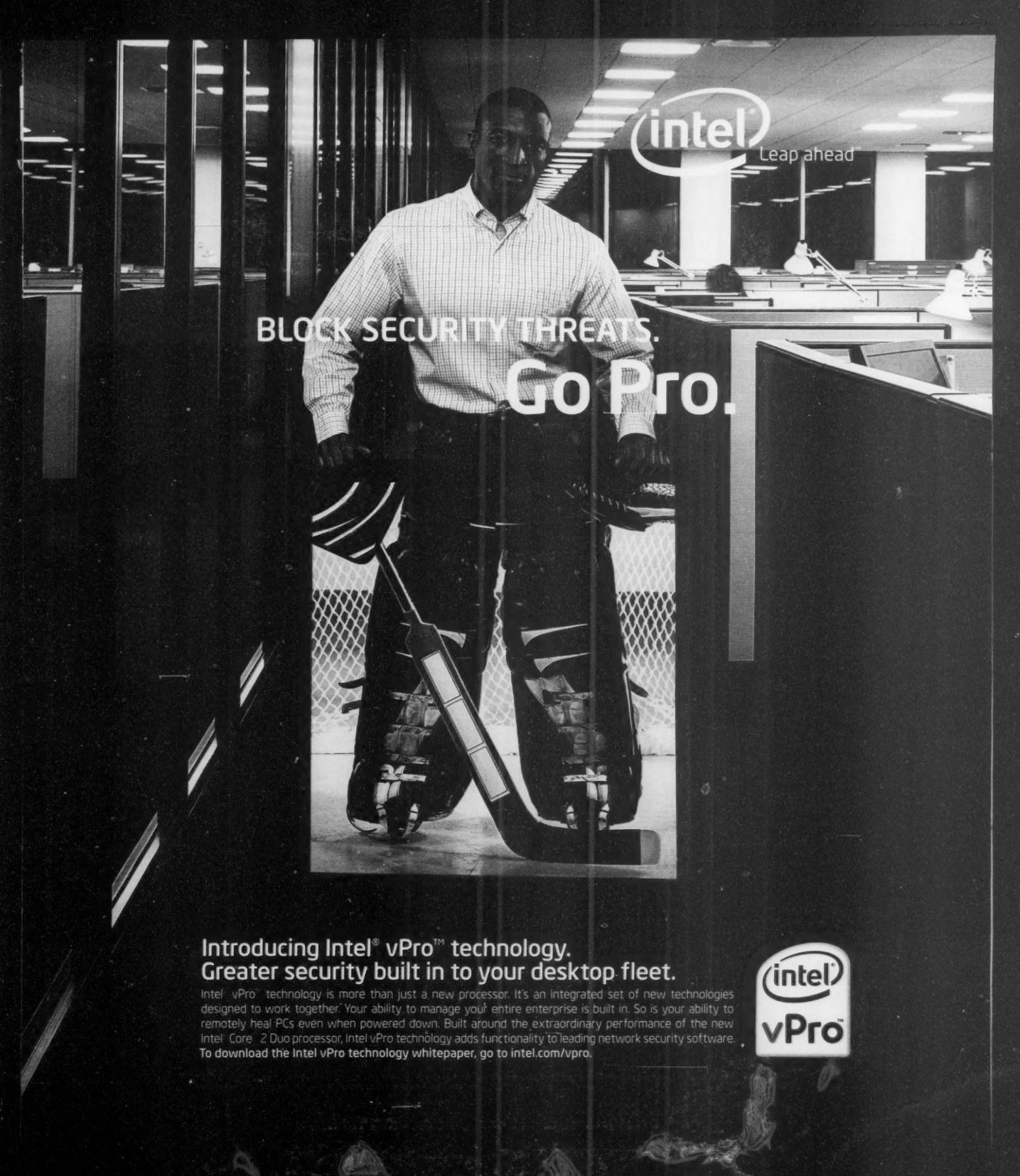

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SOAs Help Build Dialogue Between IT, Business Users

Tools aim to improve often-thorny relationship, boost collaboration

BY HEATHER HAVENSTEIN
SAN FRANCISCO

SHAYGAN KHERADPIR, CIO at Verizon Communications Inc., gets several mostly cordial instant messages each day from line-of-business workers — like customer service representatives — asking for help with their IT systems.

Kheradpir, whose IM address is available to all of the company's 250,000 employees, largely credits the company's four-year-old service-oriented architecture (SOA) for a comfortable relationship between Verizon's IT and business groups. He said the SOA has eased low-level technical work, giving IT developers more time to work with end users when building applications.

Verizon's CIO spoke at the BEAWorld 2006 conference, held here last week, where he and other users said they are expanding their focus on SOA and eyeing an emerging set of tools that promises to better nurture the relationship between business and IT, which has often been thorny.

At the conference, San Jose-based BEA brought out a new middleware offering, SOA 360, that includes components aimed at improving company-wide collaboration on development projects.

Core to the new middleware is WorkSpace 360, a unified set of SOA tools designed to bring business analysts, architects, developers and IT personnel into a shared work space for collaboration and interaction, according to BEA. WorkSpace also includes the SOA metadata repository BEA gained with its acquisition of Flashline Inc.

Mike McCoy, director of architecture and quality engineering at Accredited Home Lenders Inc. in San Diego, said at the conference that he is on the lookout for tools to improve collaboration between IT workers.

McCoy said his firm would be interested in using WorkSpace if the mortgage lender's 50 to 75 services could easily be added to the Flashline metadata repository.

Clinton Chow, chief application architect for the city of Chicago, said his organization is seeking tools to improve collaboration among technical and business users.

"We have developer-centric collaboration tools, but they are not business-user-friendly," Chow said. "You want to satisfy the business needs, but business users don't care about the underlying technology."

Tools that would "enable the business units and technical side to convey their thoughts would be very helpful," he said.

Kurt Anderson, administrator of the myAflac portal at Aflac Inc. in Columbus, Ga., said his company built a Web service that allows 11,000 insurance agents to access different types of data so it doesn't have to print and mail such data.

The Aflac SOA application cost $600,000 to build, and the company estimates that it will result in savings of more than $3.2 million annually.

Anderson said Aflac would be interested in using WorkSpace to help streamline communication between business analysts and IT staffers and to improve its governance efforts.

Shawn Willett, an analyst at Current Analysis Inc., said that despite BEA's "rhetoric," he expects different corporate groups will continue to work in their silos.

"That is just a reality," Willett said. ▸

> **We have developer-centric collaboration tools, but they are not business-user-friendly. You want to satisfy the business needs, but business users don't care about the underlying technology.**
>
> CLINTON CHOW, CHIEF APPLICATION ARCHITECT, CITY OF CHICAGO

Motorola Seeks More Mobility Via $3.9B Deal to Purchase Symbol

BY MATT HAMBLEN

Motorola Inc. last week said it plans to buy Symbol Technologies Inc. for $3.9 billion in cash, leaving some users of Symbol's wireless technologies and handheld devices anxious to know what will happen to that company's engineering operations.

"My main hope is that Symbol's engineers get to do what they've done well for years," said Allan Chandler, director of technology at Golden State Overnight Delivery Service Inc. in Alameda, Calif. Chandler's company, known as GSO, has been a Symbol customer since 1998. In July, it deployed about 850 of the vendor's MC9060 handheld computers in an effort to improve the speed and accuracy of its delivery processes.

Chandler said he is awaiting more details on what Motorola plans to do with Symbol, although he added that in general, he thinks the deal will be a positive step for Symbol users — "unless we see a degradation in service, which I don't expect."

In an interview last week, Marc Rothman, senior vice president of finance and business development for Motorola's networks and enterprise business unit, sought to allay any fears about downsizing Symbol's development staff. Rothman indicated that Motorola plans to retain all of Symbol's 850 engineers and said it will make Symbol's operations "the cornerstone of our enterprise business" for mobile and wireless products.

John O'Donnell, director of systems development at Jo-Ann Stores Inc. in Hudson, Ohio, said he intends to ask many questions of his Symbol sales representatives about what will happen to the company's developers and some of its products. But, he added, "our expectation is that with a larger company, there will be more effort in R&D, with expanded product offerings."

Jo-Ann Stores recently deployed about 2,500 of Symbol's MC3000 handhelds, as well as wireless access points made by the vendor, in 275 of its most productive stores.

Keith Morrow, CIO at a large convenience store chain that he asked not be named, said he has worked with Symbol and Motorola. "Both are good companies, and maybe it's one of those deals where they can leverage the strengths of both," he said.

Morrow's company plans to finish a two-year rollout of 12,000 of the ruggedized MC3000 devices from Symbol by the end of December. He said he recently used one of the handhelds for a week at a store and found that the system helped to improve the accuracy of product orders.

Some IT managers said they have had lingering concerns about Holtsville, N.Y.-based Symbol's future, stemming from an accounting scandal that came to light in 2003. Symbol was fined by the U.S. Securities and Exchange Commission, 11 executives were charged with securities fraud, and both its chairman and CEO resigned. Then, last year, William Nuti, who had become CEO after the scandal, left the company to become a top executive at NCR Corp.

Chandler said Symbol's top management "has been a little bit of a *Gong Show*" over the past few years. In contrast, Motorola's management "has done things right in the past 12 months and has turned [the company] around," he said.

David Krebs and Andrew Nathanson, analysts at Venture Development Corp. in Natick, Mass., wrote in a report that there is very limited overlap between the products of the two companies, except for Symbol's mobile systems and Motorola's HC700 ruggedized handheld.

John DeFeo, corporate vice president for Motorola's enterprise mobile products, said it's too soon to say whether any products will be discontinued after the acquisition is completed. ▸

On the Move

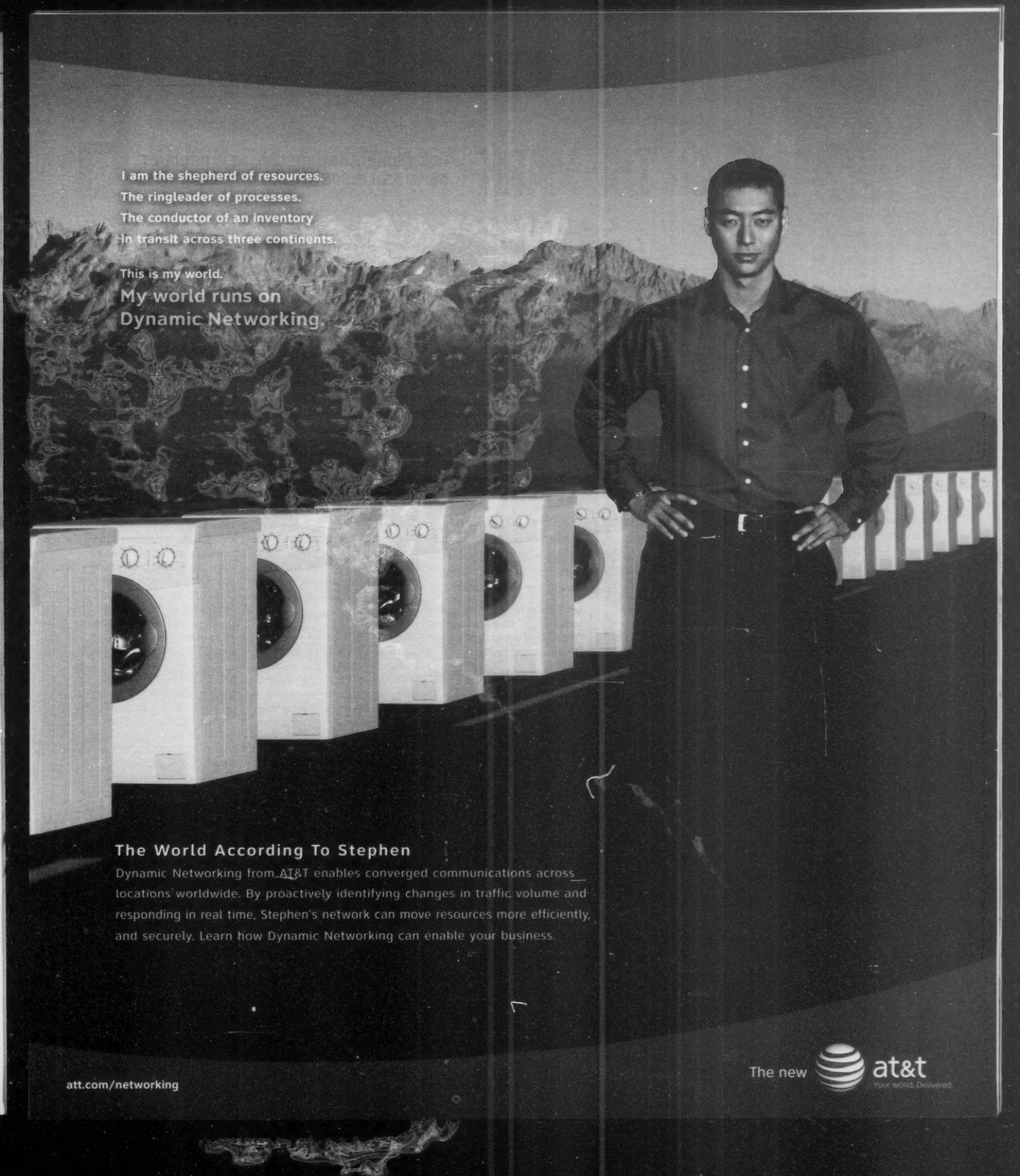
Key details of the deal between Motorola and Symbol Technologies:

PURCHASE PRICE: $3.9 billion in cash

EXPECTED COMPLETION DATE: Late this year or early 2007, pending regulatory approvals

SYMBOL'S FUTURE: Will become a wholly owned subsidiary of Motorola after the purchase.

MOTOROLA'S PLAN: Symbol's headquarters will become the core of Motorola's global enterprise mobility business.


I am the shepherd of resources.
The ringleader of processes.
The conductor of an inventory
in transit across three continents.
This is my world.
My world runs on
Dynamic Networking.
The World According To Stephen
Dynamic Networking from AT&T enables converged communications across locations worldwide. By proactively identifying changes in traffic volume and responding in real time, Stephen's network can move resources more efficiently, and securely. Learn how Dynamic Networking can enable your business.
att.com/networking
The new at&t
Your world. Delivered.

BRIEFS

Toshiba Offers to Exchange Batteries

Toshiba Corp. has offered to exchange 340,000 notebook computer batteries that could unexpectedly cut power to the notebooks, causing users to lose unsaved work. Toshiba said the defective batteries, made by Sony Corp., do not pose a fire hazard.

Feds Name Interim Health IT Chief

The U.S. Department of Health and Human Services has hired an interim national coordinator for health IT. Robert Kolodner, chief health informatics officer at the U.S. Department of Veterans Affairs, will take over the position that has been vacant since David Brailer resigned in April. The coordinator is charged with creating the infrastructure needed to support President Bush's mandate that every American have an electronic health record by 2014.

EMC Pays $175M for Security Company

EMC Corp. has acquired security information provider Network Intelligence Corp. for $175 million. Privately held Network Intelligence makes appliances that probe computer networks, providing security and compliance analysis. EMC also said that it has completed its $2.1 billion purchase of RSA Security Inc., which will form the basis of a new RSA-branded security division within the company.

HP Storage Products Use Microsoft Tools

Hewlett-Packard Co. is using Microsoft Corp. software in a portfolio of storage products aimed at taking on EMC in the small-to-midsize business market. HP's StorageWorks All-in-One Storage Systems are based on Microsoft's Windows Storage Server and are designed for Microsoft environments. The new products work with Microsoft Exchange SQL Server.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

Bots Bedevil Data Security Barriers ...

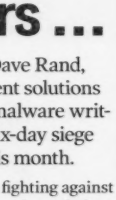
... and create global havoc. According to Dave Rand, chief technology officer for Internet content solutions at Trend Micro Inc. in Cupertino, Calif., malware writers compromised 250,000 PCs during a six-day siege on computers in Latin America earlier this month.

Now those machines are "bots," mindless devices controlled by criminals seeking to steal information. If you think it's just a case of lousy security management among south-of-the-border Internet service providers, think again. Rand points to an ISP in France that has more than a half-million malware-laced bots on its network. Trend Micro keeps regular tabs on ISPs with lax security, compiling a list of the top 100 (or, really, the bottom 100) at *https://nssg.trendmicro.com/nrs/reports/rank.php?page=1*. Rand says his company also hopes to nip bots in the bud with its InterCloud Security Service, a product-and-services combo that can be used by ISPs or large companies. Now in beta and due for release in Q4, ICSS uses gateway software tied to an update service to watch for bot behavior and then quarantines infected machines. Pricing has yet to be set. "We're not fighting against technology," Rand concludes. "We're fighting against people. It's an arms race."

8.5M Trend Micro's estimate of the number of bot PCs globally.

Once you secure your network from ...

... the outside world, take a look inside. Untrustworthy insiders might reconsider their plots to steal data if they know you've deployed Flow Control, a software agent for PCs that enforces security policies on sensitive documents. According to Liad Agmon, CTO at Onigma Ltd. in Tel Aviv, Flow Control recognizes more than 300 data formats. It can detect whether content from a tagged document has been disguised through cut-and-paste methods or name changes, or even if it has been compressed and encrypted. You can set Flow Control to stop any process or merely have it warn end users that an action has been flagged. In Q4, Onigma hopes to ship new agents for devices running Windows Mobile and Windows CE. Pricing starts at $100 per agent.



AGMON: Tag documents to protect them from misuse.

WAN acceleration newbie jacks up ...

... network throughput. Gareth Taube admits that his Burlington, Mass.-based start-up, Certeon Corp., has "entered a crowded, established market. And we're late, too." But Taube, Certeon's vice president of marketing and product development, claims that it's OK because the company's S-Series Acceleration Appliance does something that's better than what most other WAN accelerators do: It makes files, not just data packets, move faster. Taube says Certeon's "blueprint" technology recognizes documents — from Office and Oracle Financials, for now — that have already been sent over a WAN and only transmits new information, not the entire file. In the coming months, the company plans to add blueprints for Documentum, FileNet and SAP apps, among others. Pricing for the S-Series appliances starts at $6,000.

Certeon's S-Series WAN accelerator sends files fast.

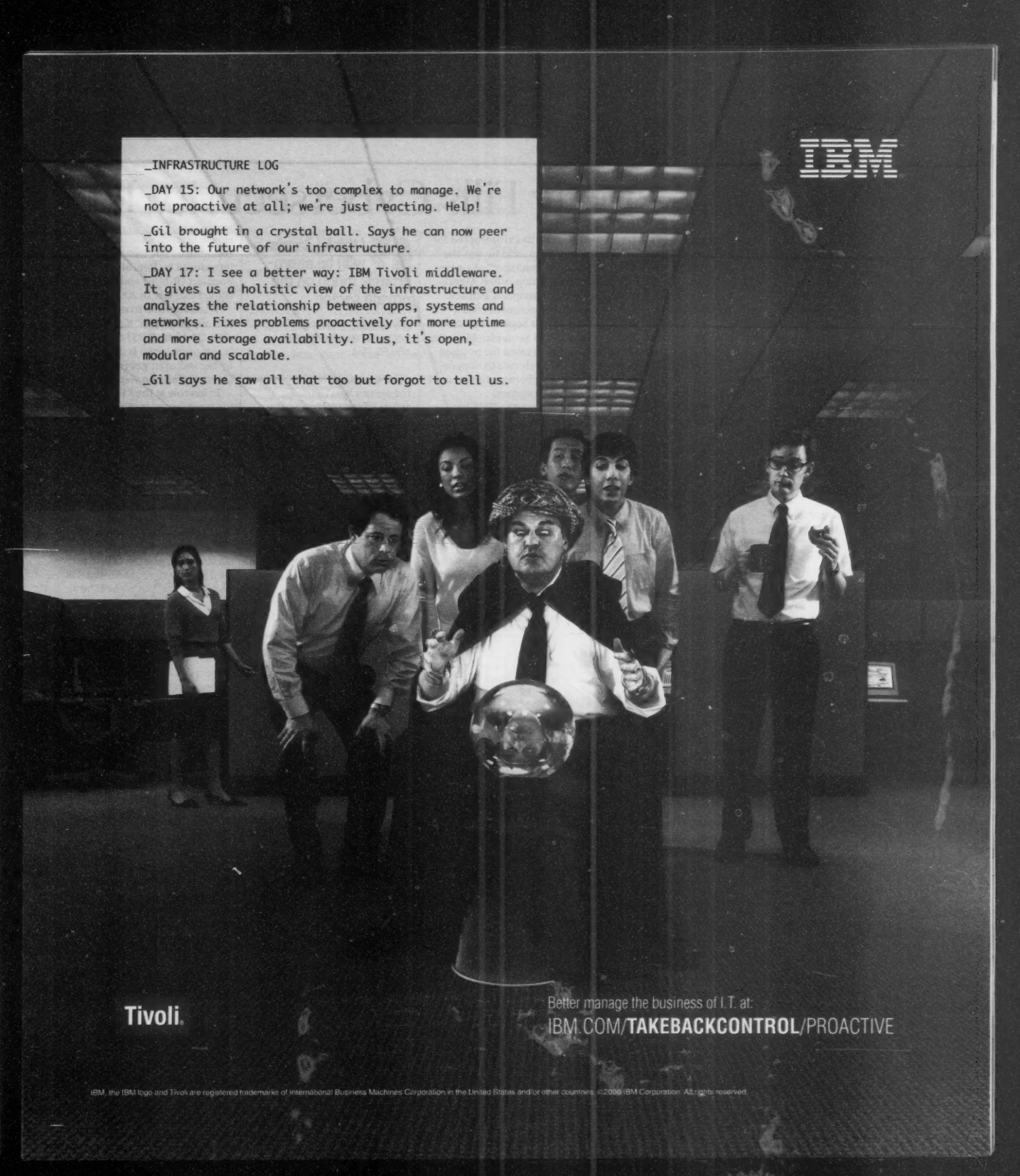
IBM's 'Miss Manners of IM' tut-tuts ...

... misuse of instant messaging. "There is a right way and wrong way to use IM," observes Penny Scharfman, IBM's program director for Lotus Notes and Domino, who is also called the Miss Manners of IM inside the company. Using the technology properly can lead to productivity gains, but if you don't do that, problems can result, Scharfman says. For example, she laments that some end users haven't mastered how to personalize their IM status to let people know when they don't want to be disturbed. Instead, they either turn off IM or constantly get interrupted by messages that they don't have time for. Another IM problem, Scharfman says, is that many end users multitask IM with phone calls, meetings and other forms of communication, giving all parties only their partial attention. One social side note: Scharfman says that IBM workers have started to adopt the IM shorthand common among kids. Even Miss Manners sends messages sprinkled with the likes of OTP (on the phone) and TTYL (talk to you later).

Tell people if you're too busy to IM, advises SCHARFMAN (IBM's Miss Manners of IM).

Spies and security agents alike get ...

... a new mobile tool. Imagine that you're the chairman of a Fortune 100 company and you want to spy on journalists and fellow board members. You'll want to equip your agents with the latest gear, so you might consider software developed by Reality Mobile LLC in Herndon, Va. Brian Geoghegan, the company's vice president of corporate development, says the Reality Vision tool turns handhelds running Windows Mobile 5.0 or Palm OS into surveillance wonders. Devices equipped with Reality Vision can send live video to a server that can then feed one or more video transmissions to other handhelds. Pricing hasn't been set for the software, which is due in Q4. Geoghegan says Reality Vision is designed for security uses, not corporate espionage.


_INFRASTRUCTURE LOG
_DAY 15: Our network's too complex to manage. We're not proactive at all; we're just reacting. Help!
_Gil brought in a crystal ball. Says he can now peer into the future of our infrastructure.
_DAY 17: I see a better way: IBM Tivoli middleware. It gives us a holistic view of the infrastructure and analyzes the relationship between apps, systems and networks. Fixes problems proactively for more uptime and more storage availability. Plus, it's open, modular and scalable.
_Gil says he saw all that too but forgot to tell us.
IBM
Tivoli.
Better manage the business of I.T. at:
IBM.COM/TAKEBACKCONTROL/PROACTIVE
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BRIEFS

California Firm Fined For Iran Business

A San Jose-based supplier of servers and computer components has pleaded guilty to selling products to Iran in violation of federal export controls, the U.S. attorney's office in San Francisco said last week. Supermicro Computer Inc. pleaded guilty to one felony count of knowingly exporting items subject to export regulations without a license; it was fined $150,000.

AppLabs Buys U.K. Software Tester

In an attempt to gain access to the U.K. corporate IT market, Software testing services firm AppLabs Inc. has acquired IS Integration Ltd. in Preston, England, for $37 million. Philadelphia-based AppLabs delivers its services to customers from facilities in India and Utah. AppLabs officials said the combined entity is expected to generate $75 million in revenue and $8 million in profits in the fiscal year ending in March 2007.

Dell, Symantec Unveil E-mail Tool

Dell Inc. and Symantec Corp. have launched a jointly developed product they say can help small businesses filter and archive their e-mail. Secure Exchange bundles Dell hardware and Symantec software that can be used to deploy antivirus and antispam shields, and archive and retrieve e-mail. The tool works with Microsoft Exchange and Active Directory mailboxes. A 500-seat license for Secure Exchange is priced at $54,678.

Red Hat Unveils First JBoss App Stack

Red Hat Inc. has unveiled its first integrated open-source application stack based on the JBoss application server it acquired this summer. Red Hat Application Stack is designed for Linux and Java developers running fewer than 10 servers. An annual subscription starts at $1,999 for a single server with no extra costs for client access licenses.

DHS Finally Fills Cybersecurity Job

Agency taps trade group lobbyist as assistant secretary

BY JAIKUMAR VIJAYAN

THE NEARLY year-long wait for the U.S. Department of Homeland Security to appoint an assistant secretary for cybersecurity and telecommunications is over.

The DHS last week announced that it has named Greg Garcia, formerly vice president of information security programs and policy at the Information Technology Association of America, to the cybersecurity post.

Before joining the ITAA in 2003, Garcia was a member of the professional staff of the U.S. House Science Committee's subcommittee on research, where he was involved in programs related to IT. Garcia has also worked for 3Com Corp., and he was the "coalition manager" of a now-defunct group called Americans for Computer Privacy.

His appointment ends a search that began last October when DHS Secretary Michael Chertoff created the position in a bid to elevate the importance of cybersecurity issues within the agency.

Since then, the DHS has been under increasing pressure from industry groups and federal lawmakers to fill the position expeditiously. Just two weeks ago, some legislators suggested at a congressional hearing that the delay in finding someone for the job had considerably weakened the agency's ability to coordinate a strategy for responding to a cyberattack against the nation's critical infrastructure.

But George Foresman, DHS undersecretary for preparedness, said at the hearing that the agency was in the final stages of reviewing the credentials of an individual who was "very qualified" for the cybersecurity job. That was an apparent reference to Garcia.

> **"I think [Garcia will] be appropriately tough on the private sector."**
>
> **JOE TASKER,** SENIOR VICE PRESIDENT OF GOVERNMENT AFFAIRS, ITAA

Garcia's appointment is "a very positive development," said Shannon Kellogg, director of government and industry affairs at EMC Corp.'s RSA software division.

In particular, Kellogg pointed to Garcia's role in helping to develop the Cyber Security Research and Development Act during his stint with the House Science Research Subcommittee. The measure was introduced by Rep. Sherwood Boehlert (R-N.Y.) and was signed into law in 2002.

"It took a while to make this appointment," Kellogg said. "But [the DHS] clearly has someone who is respected by the industry, government [agencies] and on Capitol Hill."

In his role at the ITAA, Garcia represented leading technology vendors in Washington. He also has a lot of experience working with large companies and understanding what issues are important to them, said Joe Tasker, the trade group's senior vice president of government affairs.

Despite Garcia's previous work as a corporate lobbyist, Tasker said he expects him to be a strong advocate for the government. "I think he'll be appropriately tough on the private sector," Tasker said. ▸

California Poised to Enact RFID Law

Calls for protective measures, penalties for 'skimming'

BY MARC L. SONGINI

California could soon become one of the first states to create comprehensive safeguards for personal information collected through the use of radio frequency identification (RFID) tagging in government-issued documents and identification cards.

The state legislature last month passed legislation, called the Identity Information Protection Act of 2006, to protect residents from RFID abuses. The law is expected to be signed or vetoed by Gov. Arnold Schwarzenegger by the end of the month.

State Sen. Joe Simitian, who sponsored the bill, said that governments must tread carefully in forcing such technologies onto the public.

"The question we have to ask and answer is, Do we really want state and local governments to issue documents that can broadcast our personal information without our knowledge or consent?" Simitian said.

He noted that the measure would prevent both government and criminal abuse of information stored on RFID tags.

California is one of a number of states attempting to establish protections around RFID usage — which many critics say has a huge potential for invading the privacy of citizens.

In June, Wisconsin enacted legislation that forbids placing an RFID chip on a person's body without his consent.

Wisconsin state Rep. Marlin Scheider, who sponsored the bill, said he hopes the California bill becomes law to help it gain control of the technology before it becomes so pervasive that it is "impossible to control."

The proposed California law requires that state and local governments protect data stored on RFID chips through measures such as encryption. The law forbids what is known as skimming — the reading of an RFID chip's content without the holder's knowledge.

Simitian filed an initial version of the bill in early 2005, and the effort followed what he called "a long torturous path" before its approval by the legislature.

Schwarzenegger is expected to make a decision on the bill on or around Sept. 30, according to a spokeswoman for the governor. As of late last week, he had no position on the legislation, the spokeswoman said.

Some Opposition

The proposed law is backed by the American Civil Liberties Union of Southern California, which views the California legislation as a template for the rest of the country to use.

"There are some obvious privacy risks with the application of RFID technology, especially identity theft — one of the fastest growing crimes in the nation," said Ramona Ripston, executive director of the ACLU of Southern California, in a statement.

Some industry groups are critical of the proposed law.

In a letter to Schwarzenegger, Richard Chace, executive director of the Alexandria, Va.-based Security Industry Association, which represents manufacturers, distributors and other companies in the computer security, biometrics and access-control industries, predicted that if signed, the law will lead to excessive litigation against government agencies.

It also could compromise security operations, since it mandates the public disclosure of the sites of all RFID readers, an association spokesman said.

The organization anticipates having to confront RFID legislation in other states as well. According to Chace, the group's aim is to educate legislators rather than "gratuitously bash them on this issue." ▸

_INFRASTRUCTURE LOG
_DAY 12: No one can get real-time answers. No one can collaborate. Unmanaged public IM is a security nightmare.
_Gil brought in a "collaboration accelerator." I said it looks like a cannon. He said I had a small mind.
_DAY 14: The answer: IBM Lotus® Sametime® 7.5. It's not just IM and Web conferencing, it's an affordable platform for running the business in real time. It's encrypted. Has tons of features like VoIP and location awareness. And it works seamlessly with leading public IM networks. Everyone has real-time answers now.
_We've even recovered most of our employees.
IBM.
Lotus.
Download the Lotus Sametime 7.5 demo at:
IBM.COM/TAKEBACKCONTROL/SAMETIME

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Continued from page 1

HP Scandal

should be charged with a crime, a spokesman for the attorney general said Friday. But, he added, that doesn't mean Hurd is in the clear yet.

"The key words are 'at this point,' " Lockyer's spokesman said. "We're not ruling anyone out in terms of criminal culpability. We have much more work to do, many more documents to review, more people to interview."

Hurd said that he attended "a brief portion" of a meeting in July 2005 where the leak issue was discussed and that the matter came up again in January and then in February. At the latter meeting, he said, he was told by HP's investigation team that they planned to send an e-mail containing false information to a reporter in an effort to identify the source of the leaks.

"I was asked to and did approve the naming convention that was used in the content of the e-mail," Hurd said, adding that he didn't recall being informed about or approving the planned use of tracer technology that could show HP who the e-mail was forwarded to.

Mike Holston, a lawyer at Morgan, Lewis & Bockius LLP, a San Francisco law firm hired by Hurd to investigate the leak probe, said at the press briefing that he has yet to find any evidence that Hurd was asked to approve the use of the e-mail tracer. But Hurd did approve "the concept of sending misinformation to the reporter, and the content of the misinformation," Holston said.

Earlier last week, Hurd barely mentioned the widening boardroom scandal when he appeared before thousands of users at HP Technology Forum 2006 in Houston. Hurd obliquely alluded to the scandal when he told attendees that Jack Novia, managing director of HP's Americas region, would be throwing out the first pitch at the Houston Astros baseball game on Tuesday. Hurd said he hoped that Novia wouldn't "embarrass the company, with all the press that we have had over the past week."

Beyond that, Hurd focused his remarks on HP's overall technology strategy.

But some HP officials did devote time during conference sessions to brief discussions of the boardroom problems, according to attendees.

Mark Yturralde, a systems engineer at a major health care provider that he asked not be identified, went to two technical sessions on the first day of the conference. At each one, he said, the speakers spent a few minutes talking about the leak probe, seeking to assure attendees that the scandal isn't a big problem and that it won't affect HP's technology.

Yturralde added that he's really not interested in hearing about HP's boardroom troubles. "I'm more hoping that they just concentrate on technology and the company and don't make an overly big deal over the whole scandal," he said. "I don't really think it affects us, the IT guys."

Other users interviewed at the conference also said they were mostly interested in hearing about the technology-related issues that have long dogged HP, such as the future of its HP-UX operating system.

"I'm a techie, and I just want to know if there's a long-term future for Unix or HP-UX, or is everything going to be migrated to the hegemony of Microsoft," said Rob Roy Hathaway, a systems consultant at Advanced Technology Solutions Inc. in Dallas.

Dan Berry, a senior systems engineer at Lockheed Martin Corp. in Bethesda, Md., called the boardroom scandal "a big distraction" but said, "I don't want to hear anything more about telephone records."

Berry said his chief concern involves HP's decision to move away from its PA-RISC processors. He added that migrating to HP's Integrity servers, based on Intel Corp.'s Itanium 2 chip, will cost Lockheed Martin millions of dollars. ▸

Cisco Doubles Port Count For 10-Gigabit Switches

New module for Catalyst switches aids performance

BY MATT HAMBLEN

Cisco Systems Inc. today will announce a 10 Gigabit Ethernet module with eight ports for its Catalyst 6500 series switches, doubling the number of ports and increasing switching performance by a claimed rate of up to 60%.

Cisco says its new modules (shown in a Catalyst 6500) increase throughput by up to 60%.

The eight-port module provides 64Gbit/sec. of switching capacity in data center clusters, up from 40Gbit/sec. in Cisco's four-port module, said John Yen, the company's senior manager of Catalyst switch marketing. The new module, which starts at $37,500, is also priced 30% lower on a per-port basis than the four-port version is, Yen said.

Orbitz Worldwide, an online travel service in Chicago, began testing Catalyst switches with the new 10 Gigabit Ethernet module six months ago and is now using 20 of the devices in its data center to support 2,500 servers, said Bahman Koohestani, CIO at the subsidiary of Travelport Inc.

Koohestani said Orbitz had previously used switches from another vendor, which he declined to identify, but they didn't meet his company's needs. As a result, he said, Orbitz suffered Web site outages, which stopped its sales and slowed business expansion plans because IT staffers were busy fixing problems instead of working on new projects.

Koohestani declined to disclose how much money Orbitz has invested in Cisco's switches but said the changeover is already paying for itself. Web site availability has gone from 98% under the previous vendor to 99.999%, he said.

IDC analyst Cindy Borovick said Cisco faces competition from Force10 Networks Inc., Foundry Networks Inc. and other 10 Gigabit Ethernet vendors that are typically more aggressive on pricing. But, she added, Cisco is focusing on "overall trends such as management, automation and making sure that switches are ready for handling large multicore and virtualized servers."

"Cisco is the only company that's trying to make a switch that's much more than a means for network connectivity," said Zeus Kerravala, an analyst at Yankee Group Research Inc. in Boston. ▸

Survey Shows Support for Boardroom Surveillance

HEWLETT-PACKARD would apparently find plenty of support in the boardrooms at other U.S. companies for its attempts to identify the source who was leaking confidential information to the media.

In a telephone survey this month of 226 board members at publicly traded companies in the U.S., 73% said a company's chairman should be empowered to use any legally available means to identify a board-level leaker, according to Ponemon Institute LLC.

Ponemon, a think tank in Elk Rapids, Mich., released the survey results last week. The institute said that about 71% of the respondents said it would be OK for a board chairman to review the e-mails of other members, in addition to other types of confidential data stored on a company's computers. Fifty percent said that obtaining and reviewing telephone records of individuals via "pretexting" – pretending to be the targeted individual – is proper as long as that approach hasn't been outlawed. And 53% deemed it permissible to "tail" individuals inside or outside of a company.

"It's somewhat surprising and distressing that such a high percentage of board members would be OK with this," said Alan Chapell, a research fellow on Ponemon's Responsible Information Management Council. "It sounds like in this instance, corporate integrity trumps privacy – at least as it pertains to board members."

In the long term, such attitudes could affect the willingness of some people to serve on corporate boards, Chapell cautioned.

From a legal standpoint, companies are on fairly safe ground when it comes to monitoring e-mail and other information on company-owned computers, said Chris Pierson, a partner at Phoenix-based law firm Lewis and Roca LLP.

But the law is less well defined regarding whether companies have the right to snoop on e-mail sent from personally owned computers or to obtain records of personal phone calls, Pierson said.

For instance, there are few clear-cut laws surrounding the use of pretexting, which was the method used by HP's outside investigators to obtain information, according to Pierson. One of the exceptions, he said, is the federal Gramm-Leach-Bliley Act, which makes it illegal to collect financial information about a person through pretexting.

The Ponemon survey found that about 85% of the respondents feel that protecting confidential corporate information is more important than preserving a board member's privacy rights. Just under 25% said they thought that "aggressive surveillance methods" are employed frequently or very frequently by their companies.

– JAIKUMAR VIJAYAN

_INFRASTRUCTURE LOG
_DAY 19: The business is, uh, coming apart. I.T. isn't in sync with the suits. No one's sure what they need to do. It's totally out of control.
_DAY 20: Gil fell into the crack. Maintenance is on it.
_DAY 24: I've got it. IBM Rational. A modular platform that lets us govern the entire development process and align it with our business goals. Now everyone's on the same page. Plus, we can ensure our software's in compliance and implement a service oriented architecture.
_Everyone's glad the crack is gone. Gil says his nightmares about "the dark place" are practically over.
IBM.
Rational.
Get our white paper on governing development at:
IBM.COM/TAKEBACKCONTROL/GOVERN
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GLOBAL DISPATCHES

An International IT News Digest

Munich Starts Delayed Desktop Linux Rollout

MUNICH, GERMANY

MUNICH'S MUNICIPAL government last week began migrating its desktop PCs to Linux, a year later than originally planned and nearly three years after the city announced that it would move to the open-source software.

The migration work started on Tuesday, and by Thursday the first 100 of the city's 14,000 PCs had been switched from Microsoft Corp.'s Windows operating system and Office applications to Debian Linux and the OpenOffice suite. The number of migrated systems is expected to double by the end of the year, said Florian Schiessl, the city's Linux project manager.

"There have been some delays along the way, but we're now moving steadily ahead," Schiessl said. "Today, we're still working in both the Windows and Linux worlds. But over the next two years, the Linux world will get bigger, while the Windows world will get smaller."

However, a full migration to Linux is "unrealistic," Schiessl added. Some of the hardware and software products that are used by the city's administration will continue to require Windows, he said. Apple Computer Inc. systems will also still be used, particularly for desktop publishing, said Schiessl.

■ JOHN BLAU, IDG NEWS SERVICE

GLOBAL FACT

35%

Projected percentage of the 3.4 million electric meters in Sweden that will be connected to mobile networks by 2010.

BERG INSIGHT, GOTHENBURG, SWEDEN

Insurer to Outsource 500 IT Jobs to India

LONDON

AVIVA PLC'S U.K. operation plans to outsource about 500 IT jobs to offshore services firms in India as part of a broader realignment plan that's designed to reduce its annual operating costs by 10%.

The reorganization, which was announced earlier this month, calls for reducing the London-based insurer's U.K. workforce by a total of 4,000 people through a combination of offshoring and layoffs. Aviva, which operates in the U.K. under the name Norwich Union PLC, currently has about 36,000 employees in the country.

Aviva said it plans to shift the IT jobs to Wipro Ltd. and Tata Consultancy Services Ltd. In addition, the company will transfer about 1,000 marketing, human resources and finance positions from the U.K. to its Aviva Global Services unit in Pune, India. The shift of the business jobs is tied to a plan announced late last month under which Aviva Global Services will take control of several third-party business process outsourcing (BPO) facilities in India and Sri Lanka.

The restructuring in the U.K. is expected to result in annual savings of £250 million ($470 million U.S.) starting in 2008, Aviva said. However, the company added that the various moves will cost it an equal amount between now and the end of next year.

Combined, Wipro and Tata already have about 1,500 IT staffers who are working on projects for Aviva, according to a spokeswoman for the insurer. Meanwhile, Aviva has about 6,000 business workers in India and Sri Lanka, a figure that includes employees of Aviva Global Services and the BPO companies that do work for the insurer.

■ JOHN RIBEIRO, IDG NEWS SERVICE

Indian Government Revamps Web Portal

BANGALORE, INDIA

INDIA'S GOVERNMENT last week launched an enhanced version of its Internet portal, adding new dynamic and interactive capabilities along with links to about 5,000 Indian Web sites.

The updated site, built jointly by IBM and India's National Informatics Centre (NIC) in New Delhi, is used to deliver government information to Indian citizens. The first version of the National Portal of India was set up last year as a static Web site.

The enhanced portal provides a single point of entry to government information with a single sign-on, said R. Dhamodaran, a vice president at IBM India Ltd. in Bangalore.

The NIC, part of the Indian government's Department of Information Technology, hosts the portal and provides its network backbone as well as e-governance technology and services. The agency uses Linux-based hardware and various software products from IBM to support the portal.

■ JOHN RIBEIRO, IDG NEWS SERVICE

Ericsson Sets Plan to Create Multimedia Unit

STOCKHOLM

LM ERICSSON TELEPHONE CO. this month announced plans to reorganize its business operations and hire 500 new engineers for a multimedia technology unit that the communications equipment vendor intends to set up.

Carl-Henric Svanberg, president and CEO of Stockholm-based Ericsson, said that next year the company will be restructured into three operating units focused on networks, global services and multimedia.

Most of the engineers to be hired by the multimedia group will be based in Sweden, Svanberg said. They will be charged with helping Ericsson better understand multimedia services and how demands for the technology might change in the future, he added.

The new group will also try to better leverage technology developed by Sony Ericsson Mobile Communications AB, the company's mobile phone joint venture with Sony Corp.

■ NANCY GOHRING, IDG NEWS SERVICE

Unisys to Add Two IT Facilities in India

BANGALORE, INDIA

UNISYS CORP. last week said it plans to open two more IT services delivery centers in India as part of a plan to add 6,000 offshore jobs by 2008.

Unisys, which already has a facility in Bangalore, said it plans to open a second one in the city's Whitefield suburb sometime next month. A third Indian facility, to be located in Hyderabad, is expected to begin operations in next year's second quarter, the IT equipment and services vendor said.

The Blue Bell, Pa.-based company didn't disclose how many employees it plans to hire to staff the new facilities.

Unisys opened its existing operation in Bangalore two years ago. Staffers at that facility work on application development and support, software maintenance, systems integration, IT and business process outsourcing, and internal IT administration functions.

■ JOHN RIBEIRO, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

The University of Melbourne in Australia has signed an internship and hiring agreement with Satyam Computer Services Ltd. in Hyderabad, India. Each year, Satyam will provide up to 10 software development internships to university students and hire 20 software engineering graduates. The university and the IT services firm will also conduct joint research on grid computing and other technologies.

■ DARREN PAULI, COMPUTERWORLD AUSTRALIA

Intel Corp.'s venture capital arm has purchased an unspecified ownership stake in ADA Cellworks SDN, a company in Selangor, Malaysia, that provides planning services for radio-based networks. ADA plans to use the funding from Intel Capital to expand its business into services for WiMax networks.

■ SUMNER LEMON, IDG NEWS SERVICE

The Australian Computer Society said last week that the unemployment rate for IT professionals in Australia has fallen to 5.1%, its lowest level since the turn of the century. That finding was based on the society's annual survey of its members on IT and communications employment. The ACS said this year's results compare with IT unemployment rates of 7.2% last year, 10.6% in 2004 and 12.4% in 2003.

■ MICHAEL CRAWFORD, COMPUTERWORLD AUSTRALIA

Dell Inc. has selected Chennai, the capital of the state of Tamil Nadu in southern India, as the location for its first PC manufacturing plant in that country. The company plans to begin making desktops in Chennai by mid-2007. The facility, which will serve the Indian market, will be able to produce about 400,000 PCs annually, Dell said.

■ JOHN RIBEIRO, IDG NEWS SERVICE

BT Group PLC has awarded ZTE Corp., a telecommunications equipment maker in Shenzhen, China, a contract to develop mobile handsets. The deal calls for ZTE to develop third-generation handsets that support the DAB-IP standard for streaming TV and digital radio to mobile devices, the Chinese company said. Financial terms weren't disclosed.

■ SUMNER LEMON, IDG NEWS SERVICE

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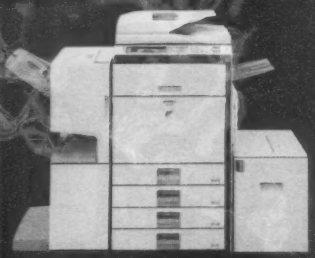

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Judge Rules Accessibility Suit Against Target Can Proceed

Group claims retailer's Web site discriminates against blind patrons

BY LINDA ROSENCRANCE AND CAROL SLIWA

A FEDERAL JUDGE in San Francisco ruled this month that a lawsuit filed against Target Corp. by the National Federation of the Blind challenging the accessibility of the retailer's Web site can move forward.

NFB officials contended that the ruling sets a precedent, establishing that retailers must make their Web sites accessible to the blind under the federal Americans With Disabilities Act (ADA).

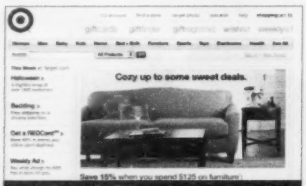
"This ruling is a great victory for blind people throughout the country," said NFB President Marc Maurer.

When asked if the NFB would file lawsuits against other retailers in an effort to improve Web site accessibility, NFB spokesman John Pare said, "You probably could imagine that we would."

The lawsuit was filed a California Superior Court on Feb. 7 as a class action on behalf of all blind Americans. The suit was moved to federal court a month later.

The plaintiffs in the case — the NFB, the National Federation of the Blind of California and blind college student Bruce Sexton — claimed that the Minneapolis-based retailer's Web site, *www.target.com*, violates federal and state laws prohibiting discrimination against people with disabilities.

Target had filed a motion to dismiss the case, arguing that the laws don't apply to Web sites because they aren't physical places of public accommodation. The retailer further claimed that applying California statutes to its Web site, which is accessible to consumers nationwide, would violate the Commerce Clause of the U.S. Constitution.



The NFB says the Target ruling sets a precedent.

In her decision early this month, Judge Marilyn Hall Patel also denied an NFB motion for a preliminary injunction to force Target to promptly make its site accessible to blind people. Patel ruled that sufficient questions were raised in the lawsuit with respect to whether the average blind person can access Target's Web site.

"While disappointed the lawsuit was not entirely dismissed, Target is pleased the court denied the plaintiffs' motion for a preliminary injunction," the retailer said in a statement to *Computerworld*.

"We believe our Web site complies with all applicable laws and are committed to vigorously defending this case," the company said, adding, "We will continue to implement technology that increases the usability of our Web site for all our guests, including those with disabilities."

Mazen Basrawi, a lawyer at Berkeley, Calif.-based Disability Rights Advocates, a co-counsel for the plaintiffs, said, "This is groundbreaking. No court has yet ruled directly that the ADA applies to Web sites, which [Patel] has clearly done in this opinion. We hope that it [this case] is going to encourage businesses to include accessibility in their Web development."

When asked about its policies by *Computerworld*, The Home Depot Inc. said that it "continually reviews and updates its Web site on the basis of many factors, including customer feedback." In a statement, the Atlanta-based home improvement retailer said that it "is currently developing enhancements to the site that would further improve the shopping experience for our customers with disabilities."

In the ruling, Patel said that the ADA statute "applies to the services of a place of public accommodation, not services in a place of public accommodation. To limit the ADA to discrimination in the provision of services occurring on the premises of a public accommodation would contradict the plain language of the statute."

In an endnote following the decision, Patel noted that Target's Web site "is a means to gain access to the store, and it is ironic that Target, through its merchandising efforts on the one hand, seeks to reach greater numbers of customers and enlarge its consumer base, while on the other hand it seeks to escape the requirements of the ADA." ▸

EBay Seeks Grid Standards as It Expands Massive System

BY PATRICK THIBODEAU

EBay Inc. is using grid computing to deliver online auction services to millions of users. **Paul Strong**, *the company's distinguished research scientist, said the biggest technology issue facing eBay is managing its shared grid infrastructure, which is spread across more than 15,000 servers. Instead of managing individual servers, eBay wants its systems administrators to manage aggregations of servers, a process that would be eased considerably with grid standards. In a recent interview with* Computerworld, *Strong discussed the need for such standards and eBay's role in creating them as a member of the Open Grid Forum.*

Does the lack of strong grid standards slow the availability of off-the-shelf tools? There are bits that we can buy. We use certain off-the-shelf components in our infrastructure, but we tend to have to be our own integrator.

How can standards help large organizations build and run Grid computing systems? If I'm an enterprise, I'm not going to buy from a single vendor. My data center is inherently heterogeneous and always will be, because I'm never going to put all my eggs in one basket. If we want to get grid in the data center, we need the ability to have integrated solutions.

In an ideal world, I would like to be able to buy [standards-based] solutions off the shelf and not have to be my own integrator, because there's a very high cost to it.

How mature are the grid standards today? From an enterprise perspective, not enough to feel that one could build software that would stay the same through time. One of the big dependencies that a big enterprise has is you can't afford to depreciate or make something obsolete next year. That's why standards take time: because everyone wants to make sure that when they commit to a standard, it's stable.

How can eBay's experience help the industry create grid standards? We're pretty much on the leading edge in many of these technologies. There will be many other companies that in time follow us and end up with these scale issues. We're beginning to see that already. We believe that we are beginning to solve these problems.

For the long run, we don't believe that building IT tools and management tools is our core competency. Today, it is something we have to do because we have no choice.

In the long run, we would rather be buying off-the-shelf solutions. The best way of making sure they meet our needs in the long term is to be an active participant in driving the standards that allow those integrated and interoperable solutions.

Is participation in standards processes a recent change in eBay philosophy? Yes, it is. We haven't been active participants in standards bodies. Obviously, eBay is heavily recognized as a brand, a consumer brand, but in terms of [being] a technology player, we haven't done much.

What persuaded eBay to shift its technology philosophy? I was recruited by eBay about a year ago, and there was an explicit recognition that what we were doing was grid, and we recognized that doing it exclusively ourselves wasn't where we wanted to be.

I work in eBay's research labs, which is dedicated to a forward-looking, two-to-five-year worldview of what we're doing. That only was formed in the last 12 months. We need [make sure that eBay is] walking in a certain direction. ▸

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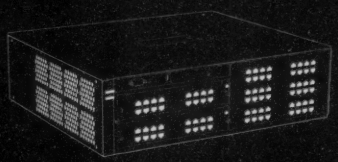

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DON TENNANT

Culture of Evasion

IT WAS EVEN more obscene than I had imagined it might be. I had held out hope that Hewlett-Packard CEO Mark Hurd would do the right thing and address the company's leak-probe scandal directly and courageously during his opening keynote at last week's HP Technology Forum in Houston. I knew it was a long shot. But I didn't expect Hurd's disdain for his users to be so blatant.

DON TENNANT is editor in chief of Computerworld. Contact him at don_tennant@computerworld.com.

In fact, my hopes had risen a bit when I walked into the cavernous hall where the opening general session was being held, because there were microphones set up at several locations in the audience. If he's bold enough to take questions from the crowd, I thought, maybe this is going to be handled the way it should be after all.

Hurd was introduced by Jack Novia, an HP senior vice president. When Hurd took the podium, he remarked that Novia was going to throw out the first pitch at an upcoming Houston Astros baseball game. He quipped that he didn't want Novia to "embarrass the company," especially in light of "all the press we've had over the past week."

Then Hurd proceeded to talk about how HP wants to do three things all at the same time: grow, be efficient, and align the company's human and financial capital with its strategy. There was no further reference to the scandal — not so much as a simple reassurance that he was committed to ensuring that the fiasco would not distract the company from serving its users.

When Hurd concluded his remarks, he said he was going to take some questions. But rather than giving the audience the opportunity to use those microphones, he welcomed Novia back onto the stage. Novia held several cards with questions that he claimed came "from our crowd." That struck me as odd, because I had arrived at the session fairly early, and I never saw anyone passing out or collecting any question cards.

The four softball questions couldn't have been any more lame or self-serving. They asked about the significance of HP's Mercury acquisition, how HP differentiates itself from its competitors, how Hurd sees HP Services going forward, and how the rest of the company is uniting behind the sales force.

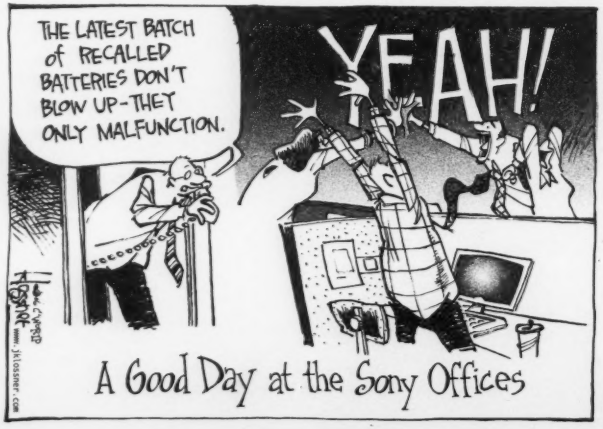
As it turned out, none of the attendees I spoke with was aware of the opportunity to submit questions either. When I asked an HP PR rep where the questions had come from, she said that she thought they may have been submitted online by members of HP's user groups and that she would confirm that and get back to me. Another PR rep said that she didn't know where the questions came from but would ask Hurd's speechwriter. I didn't hear back from either one by deadline.

Regardless, Novia certainly presented them as questions submitted by the audience, which clearly wasn't the case. And Hurd was integral to the deception.

When the Q&A charade was over, Hurd disappeared backstage. I later learned from a colleague, IDG News Service correspondent Robert Mullins, that Hurd was immediately whisked into a waiting car and driven away. Mullins had tried to get close enough to Hurd to ask a question, but he was physically blocked by Hurd's PR and security handlers.

The entire episode made me think of the irony of a particular line in Hurd's keynote — the one in which he said that HP is "trying to build a culture of execution and accountability." Accountability? That's going to be awfully difficult as long as the company's CEO demonstrates by his example a culture of dissemblance and evasion.

Don Tennant



MICHAEL H. HUGOS

When Luck Comes Your Way

LUCK, THEY SAY, arrives when preparation meets opportunity. Sometimes a plum project comes along, and it's as if someone created it just for you. You're offered a clear goal and full authority to get the job done. You accept the offer to head up the project, and things work out the way you planned them.

My last column was titled "Lessons Learned From a Major Failure" [Aug. 21]. This time, I want to show what I learned from a big success. I learned that success is a delicate thing, that there's an element of luck involved, and that success is always a group effort — so make sure to share the credit. Here's a recap of what happened **(and what I did to keep luck on my side).**

MICHAEL H. HUGOS is a partner in AgiLinks LLC and a speaker. He is a member of the 2006 Computerworld Premier 100 IT Leaders class. His books include *Essentials of Supply Chain Management, 2nd Edition* (John Wiley & Sons, 2006). He can be reached at mhugos@yahoo.com.

I collaborated with senior management to define project objectives and create a conceptual- design for the IT infrastructure we needed. Then I broke the design into four subsystems and worked with a small group of senior developers to figure out how to build the first versions of those subsystems quickly. **(So instead of one big, complex project, I created smaller, simpler ones that could run independently and simultaneously; that gave me agility. I also attracted a talented group of senior developers. Luck likes talent.)**

At the shareholders' meeting in Florida that spring, I laid out what the project would deliver and how each subsystem would operate. I told the shareholders that when we met next, in six months at our industry's annual trade show, they would see the first version of those subsystems in production. **(I built credibility and support by unambiguously describing what would happen and committing to a specific deadline, so I got the people and the budget I requested.)**

COMPUTERWORLD

EXECUTIVE BRIEFINGS

EXECUTIVE GUIDES FOR STRATEGIC DECISION-MAKING

Mainstream BI

Business intelligence is making some major enterprise inroads. But is your IT organization ready for it?

EXECUTIVE SUMMARY
Everywhere, Every Time BI

BI AND THE BUSINESS
BI Spending, Benefits Grow
Sharing the BI Wealth
Insurer Seeks BI Boost

IMPLEMENTATION TIPS
Fine-tuning BI Performance
Focusing BI on ROI
Web Services Speed BI

TRENDS
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STRATEGIC INSIGHTS FROM THE EDITORS OF COMPUTERWORLD

EXECUTIVE SUMMARY

Everywhere, Every Time BI

IF BUSINESS INTELLIGENCE used to be a rearview mirror showing where a business had gone off the road, business managers today want BI to serve as a global positioning system, showing them where they are and the shortcuts to their destinations.

Business intelligence refers to products that help businesses store, find and analyze the information they need to make better decisions. Historically, BI has produced "canned" reports based on predefined criteria and a chosen subset of corporate data, such as a weekly or monthly snapshots of sales or production data. Over time, BI applications have gained the ability to access more real-time information and to let users ask follow-up questions — or make "ad hoc queries" — of the system as they think of them.

Now leading-edge organizations are deploying "operational BI," which links the insights and trends uncovered by BI to everyday business decisions, or even automates those decisions. A study conducted by Accenture Ltd. showed that successful companies are five times more likely than lower-performing firms to cite analytics, such as those performed by advanced BI tools, as a key element of their business strategies. Compared with lower-performing companies, these organizations have more sophisticated analytical technologies, value analytical insights more and have better analytics capabilities.

Companies seeking to give more employees better information to make decisions are also continuing to expand BI beyond the 15% or 20% of high-end business analysts and executives who have historically been its main users. Such companies are deploying BI not only to those who analyze what has already happened, but also to the decision-makers and front-line workers — and applications — who determine success and failure every day on the sales floor, on the factory floor or in cyberspace.

Faster Action

Some companies are linking BI systems, in real time, to applications that can make decisions based on the output from a BI system. Online insurance marketer Insurance.com hopes to send targeted banner ads with customized offers to customers while they're shopping on its site. The hoped-for payoff: a 10% increase in the number of customers buying insurance on the site.

At Phoenix-based electronics distributor Avnet Inc., a BI application checks price quotes given to customers by sales reps to ensure that the quote provides the required gross profit margin. If it doesn't, the quote is sent to a manager for review before being processed. This is the sort of automated, real-time review of complex transactions that would be impossible, or expensive, without automated tools such as BI.

BI can also save money, and time, by presenting complex information more clearly. Every day, New York Power Authority prepares 1,100 bids to buy electricity, using information from 26 sets of data from 11 sources. The authority uses BI to give its electricity traders, asset managers and executives dashboards equipped with analytics so traders know the optimal trading strategies and can perform "what if" analyses.

Prior to using the dashboards, "traders would end up with two screens and 20 windows open," says Wayne Sipperly, manager of energy markets analysis at the power provider. "There were no alerts, no trending capabilities." Since going into production, the project has saved traders an hour a day each, yielding $500,000 to $1 million in annual savings, he says.

Easier Deployment

New technologies are also helping users navigate the roadblocks and obstacle courses that have made BI an expensive, complicated process.

Rather than constructing huge data warehouses to hold BI data, customers are using XML and Web services to draw the data needed for BI from sources either inside or outside the organization. Because they rely on standard interfaces for communicating among applications and servers, Web services smooth the road to BI. They make functions such as finding and serving up data available as "services" for any server or application on the corporate network without having to write a new interface for every two applications that need to communicate. This service-oriented architecture (SOA) makes for faster, less expensive BI applications than were possible with the point-to-point connections of the past.

Cosmetics maker Coty Inc. is using SOA technology to integrate applications from companies it has acquired. Without this capability, expanding BI beyond a "chosen few" controllers and analysts would require a large amount of expensive custom coding, says Senior Vice President and CIO David Berry.

At Cross Country Healthcare Inc., a staffing firm for the health care industry, CIO Kipp Vann plans to use Web services to integrate data from operational systems with BI analytics applications to send managers dashboards showing the performance of the company's recruiters. "The main reason we are looking at a Web service model is the real-time aspect of the data," Vann says.

At the same time that Web services are making them easier to deploy, BI applications are becoming more important to the business. The end result is that administrators must monitor BI apps with the same care and attention they once lavished only on high-volume transactional applications.

Administrators are also looking to hosted BI services as a cost-effective way to

Define 'Analytics' Before Buying

ONE OF THE WORDS buzzing around business intelligence software – *analytics* – has been through the linguistic grinder, with vendors and customers using it to describe very different functions.

The term can cause confusion for enterprises, especially as they consider BI products from vendors that use *analytics* to mean different things, says Andreas Bitterer, a Gartner Inc. analyst speaking at a Gartner BI conference.

"It's fairly interesting who is actually positioning themselves as a vendor who can provide the ability to do analytics," Bitterer says. "And again, whatever they mean by that is still fairly unclear. If you believe some of the marketing and PR . . . it is just fluff."

When Gartner conducted an informal survey among users about what the term means, the answers ranged from online analytical processing to monitoring call centers to reporting and data mining, Bitterer says.

The responses "were completely all over the place," he says, adding that Gartner had more questions than answers after the survey.

CONTEXT-SPECIFIC INSIGHT

Gartner has created its own definition: "Analytics leverage data in a particular functional process (or application) to enable context-specific insight that is actionable." It can be used in many industries in real-time data-processing situations to allow for faster business decisions, Bitterer says.

For example, a customer trying to withdraw money from a cash machine demonstrates analytics in action: The data being leveraged is a bank account balance, the process is the withdrawal, the context-specific insight is the fact that the customer has no overdraft protection, and the action is the confiscation of the person's debit card.

Analytics is different from BI, although BI products play a role in analytics.

SAP AG, Oracle Corp. and Microsoft Corp. have no apparent definition of analytics, although they toss the word around frequently, Bitterer says.

For customers trying to determine how the various definitions align, "just grill [the vendors] on that," he suggests, "because it's kind of meaningless if they sit on a term."

extend access to more users, without the need for expensive infrastructure upgrades.

More Capabilities

As computers and networks become more powerful, industry observers expect BI to expand to serve dramatically more users and to gain substantially greater capabilities.

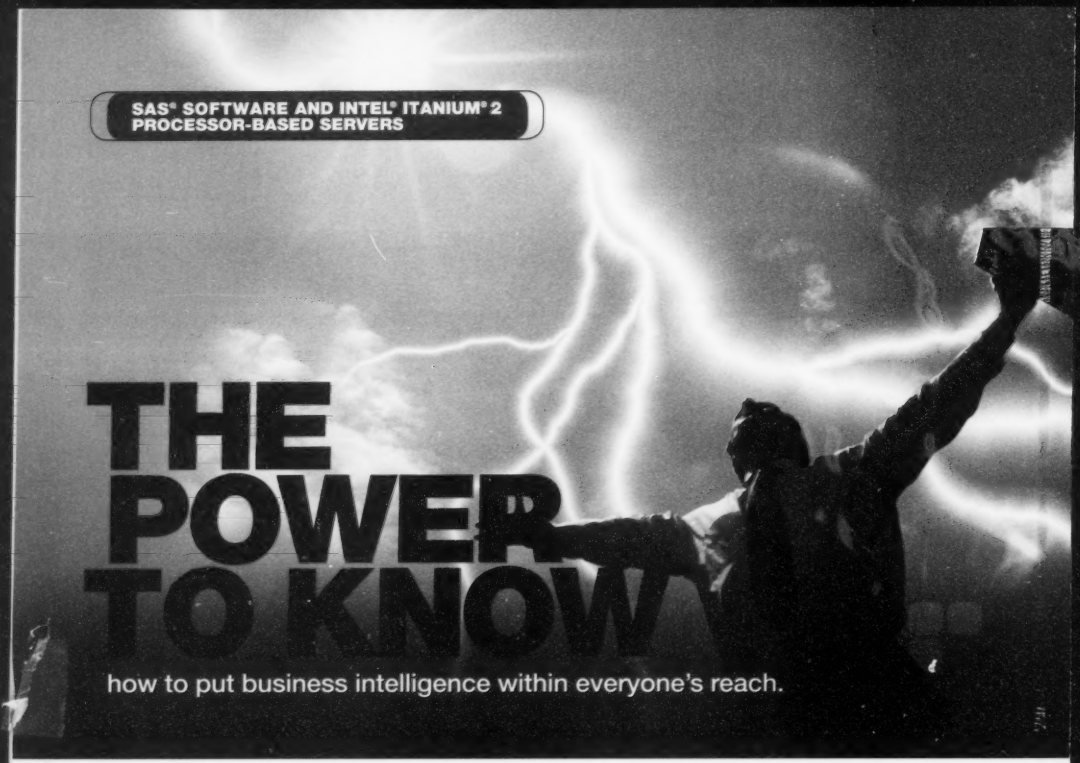
One example is the ability to access and analyze not only structured data within databases, but unstructured data such as that in word processing, spreadsheet or presentation files. Jonathan Wu, senior principal at consultancy Knightsbridge Solutions LLC in Chicago, predicts BI applications will reach that point by 2015 and "become a component of a broader category called knowledge management."

Other observers predict that BI will become accessible to all users within a company and extend deep into the supply chain. However, as BI requires more organizations to share more data in more ways, those organizations will have to agree on policies for how to share, structure and secure their data. They will have to integrate tools from vendors in a still-maturing market and ensure that the data used is kept secure as it travels from its secure point of origin for analysis at some other location or even some other organization.

But above all, expect BI applications that are more closely tied to the immediate needs of the business, better able to easily integrate and present information from customers and suppliers as well as from within the enterprise, and able to put the insights it presents to work more quickly.

BI is making big waves in the enterprise. Companies have realized how business intelligence can help streamline internal operations, stay ahead of the competition in a rapidly shifting marketplace, and even identify new business opportunities. This report not only discusses how companies can use BI, but also how to use it more efficiently. There's information about BI's technical requirements, as well as advice for managing the numerous IT pieces that are required for a major BI rollout.

FREE DOWNLOAD: For a limited time, get this full report (a $195 value) for free, compliments of SAS and Intel at **www.computerworld.com/06/bi_report**



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Hands-on senior developers who led by example ran each team. They did the hardest work and mentored team members as the project progressed. Junior members learned by doing, and senior members were engaged with challenging and interesting work. **(When people are interested in what they're doing, they do good work, and things get done quickly!)**

My project office group worked with the team leaders every week to keep plans and budgets up to date for each subsystem. Leaders were not distracted from their development work by reporting requirements, and we all got accurate weekly plans, budgets and progress reports from an objective third party. **(We saw problems and opportunities quickly and responded effectively. Luck likes people who know what's going on.)**

We unveiled the first versions of all four subsystems at a trade show in Las Vegas that fall. We were on time, and the CFO even announced that we were slightly under budget. Our business units and customers started using the subsystems right away. **(This created a great surge of support for the project. The company gave me more money to further enhance those subsystems.)**

The next year, we repeated what we had accomplished the first year and delivered the second version of those subsystems on time and within budget. Customers liked what we could do for them, and with the new IT infrastructure, we ate our competitors' lunch. **(We moved fast and grabbed the initiative. Our competitors spent a lot more money and took another three years to catch up with us.)**

Sometimes, when the stars line up and you don't get in your own way, luck looks upon you and smiles. ▸

THORNTON A. MAY

Where Are All the Health Care IT Pros?

HEALTH CARE IT needs integration, and I'm not talking about making sense of what have to be some of the most complex information supply chains in the world. That is a huge problem, involving multiple data streams, incompatible formats and a detail-obsessed bureaucracy, but it won't be properly solved until the IT people working within the health care system reconnect with the larger world of IT and are reintegrated into the mainstream of society and organizational practice.

Sometimes it seems as if health care's IT professionals are missing in action. As big as health care is — it accounts for approximately 16% of U.S. GDP — how many of you have ever met a health care CIO or even a health care IT professional?

THORNTON A. MAY is a longtime industry observer, management consultant and commentator. Contact him at thorntonamay@aol.com

I spend 250 days a year on the road. I receive roughly 1,000 business cards every six weeks. You might expect that a significant subset of the people I meet would be involved in health care. This is not the case. Much of the IT world engages in knowledge-seeking migrations to large-scale events such as the *Computerworld* Premier 100 IT Leaders Conference and the Evanta CIO Executive Summit Series, or to more intimate gatherings such as UCLA's Managing the Information Resource program, the Berkeley CIO Institute, the Value Studio Program at Florida Community College at Jacksonville and the CIO Solutions Gallery at Ohio State University.

I've been to them all, and I've scanned the attendance rosters, and I haven't seen much evidence of health care IT folks. Where are they? Hunkered down at their desks reading online medical journals?

One factor that keeps health care IT professionals away from these knowledge exchanges is that these venues welcome practitioners from multiple vertical markets. Many health care professionals (and not just those on the IT side) see their industry as being off-the-charts different. In their eyes, their business is so unique that it requires its own universe of conferences. Thus, many health care professionals live isolated from every other vertical market, on their own Galapagos Islands. The downside of this, particularly in the IT area, is that health care professionals do not benefit from exchanging knowledge with a broader population that is working on similar problems.

And the fact is, there's a huge opportunity to import best practices from other vertical markets into how health care uses IT. To take just one example, consider Boeing. This company has managed to digitize and network-enable global collaboration, drive paper out of its manufacturing processes and manage a global web of world-class suppliers to Six Sigma precision. The IT folks at Boeing who have been working on these initiatives probably have some good lessons for the folks in health care IT.

Traditional health providers are facing competition from walk-in medical offices and retail-store clinics. At the same time, shrinking insurance benefits mean patients are paying more of their own bills. The net result is that family medicine is more than ever a consumer service business. It stands to reason, then, that health care IT folks could learn something from practitioners in more traditional consumer service businesses.

Moving health care into the Digital Age by handling patient records and tracking treatments electronically is no small task. Health care IT professionals are smart and resourceful, but they have to realize that they don't have to reinvent the wheel. They should hop off their vertical market island and join the rest of us in making this a better world. ▸

WANT OUR OPINION?

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READERS' LETTERS

Berserk Marketing

IN TAKING Oracle to task for "throw[ing] its own customer under the bus," Don Tennant missed the salient point to be learned from this particular debacle, and that is that *all* marketing people seem to be "narrow vision, take no prisoners and damn our allies too" berserkers ["Pointing in the Mirror," Editorial, July 3]. Oracle is merely a glaring horror story. Look at what the marketing people do to the design of Windows: hide necessary controls, change the interface from "user-friendly" to "you're too dumb to use anything that you haven't used for a week," and throw in gratuitous applications bundling that increases the inherent instability of the system (not to mention irritating various antitrust authorities).

I remember being told that if you made a better mousetrap, the world would beat a path to your door. Apparently, marketers think "better" means "harder to use, flashier, unreliable, expensive and aimed at stupid buyers."

Rich Tietjens
IT technician, Tualatin, Ore.

Maintaining SANity

JEROME WENDT'S article "SAN Costs and Risks to Greatly Increase" [*Computerworld.com*, July 6] is an excellent argument in the arsenal of the SAN expert who is asked by management to reduce project cost by eliminating SAN management tools.

Geoffrey Milos
Systems and technology manager, AlphaPlus Centre, Toronto

Innovation Tips

THE IT DEPARTMENT may or may not be the place to innovate ["Stifling IT Innovation," Management, July 10]. It usually isn't, but it's often the place to enable innovation. In his book *Dealing With Darwin*, Geoffrey A. Moore identifies 14 areas for innovation depending on the company, the market and many other factors. Understand your company, products, market and competition, and then look for areas to innovate. Innovation doesn't work unless it provides an unfair advantage!

Paul Cubbage
Boulder Creek, Calif.

Think Linux

IF McAFEE wants to outflank Microsoft in the security realm, it really should consider porting its products to Linux ["McAfee CEO Ready to Take on Microsoft," News, July 17]. Microsoft is not about to go there (until it's too late), and the first major security company to do so will lock into major market share. Linux would allow room for product differentiation in both the workstation and server environments.

Douglas Campbell
Senior software engineer, Culver City, Calif.

Apple's Head Start

THE ARTICLE titled "Intel's Core 2 Duo Looks to Be a Barnburner of a Chip" [*Computerworld.com*, July 18] seems incomplete, since it makes no mention of Apple's use of the Intel Core 2 Duo in its latest line of laptops, iMacs and Mac minis. These are smaller and quieter boxes, just as the article speculates other computer manufacturers will be able to build with this chip. Once again, Apple is ahead of the game.

R. Douglas Lawhead
Charleston, Ill.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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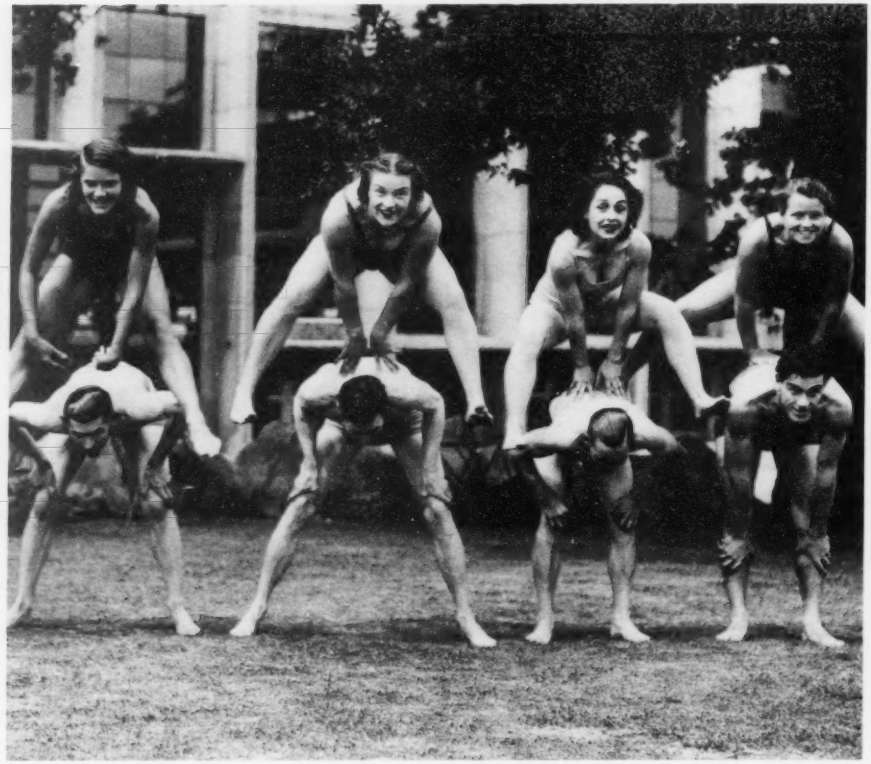

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QUICKSTUDY

LAMP

This acronym (Linux, Apache and MySQL, with the P standing for the scripting language of choice: PHP, Perl or Python) refers to a set of free software programs commonly used to run dynamic Web sites or servers. **PAGE 32**

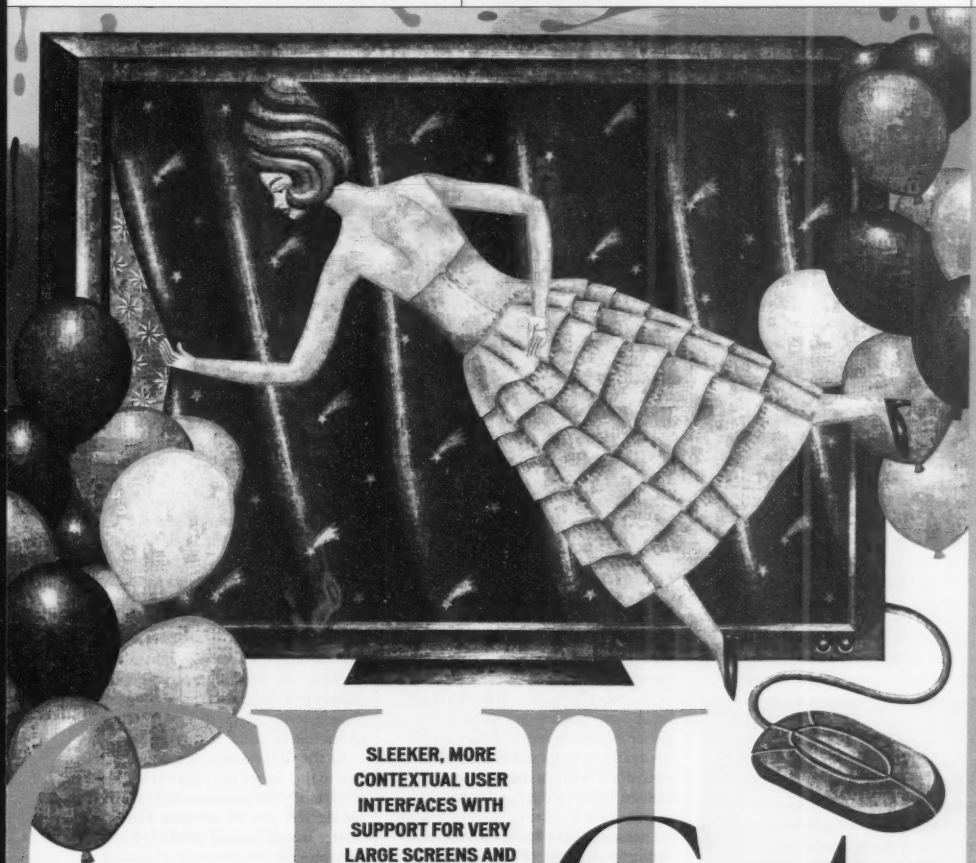
Geek's Garden

This week's stroll through the technology landscape features real-time traffic monitoring, single-molecule transistors and 18th century animated dolls programmed to perform complex tasks. **PAGE 31**

SECURITY MANAGER'S JOURNAL

Cutting Through the Fog of Security Data

C.J. Kelly has a momentary mental lapse as she tries to get a handle on all the data her security tools produce. **PAGE 34**



RICHARD DOWNS

GUI Gets a Makeover

SLEEKER, MORE CONTEXTUAL USER INTERFACES WITH SUPPORT FOR VERY LARGE SCREENS AND GESTURE-BASED INTERACTION ARE IN THE OFFING.

By Robert L. Mitchell

THE graphical user interface — keyboard, mouse, windowing system — has dominated personal computing for the past 20 years. GUIs today represent the culmination of innovative work at organizations ranging from Xerox PARC in the '70s to Apple Computer Inc. in the '80s. But it was Microsoft Corp. that popularized it for mainstream business computing in the '90s. Today, Windows and the Office productivity suite have become the GUI standard-bearers for the business desktop.

With major revisions of both products ready to roll out, the enterprise desktop GUI is getting its first significant face-lift in years. Most of those changes, such as the Aero 3-D features in Windows Vista, are small steps forward. Others, such as Office 2007's ribbon bar, represent a bigger leap — both for the GUI and for end users.

More changes lie ahead. The GUI will get better at simplifying user options by filtering them down based on social or operational contexts — or where a mobile computing device is being used, researchers say. Tomorrow's GUIs will adapt to bigger screens and multiple displays by rearranging the desktop and relegating different content to primary and secondary displays. Larger display acreage could also push gesture-based input devices such as touch screens, digitizing pads and the stylus into the mainstream.

A The increased complexity of today's computer systems is forcing change upon the GUI. As the number of features has exploded, users have been overwhelmed with layer after layer of icons, tool bars and menu options.

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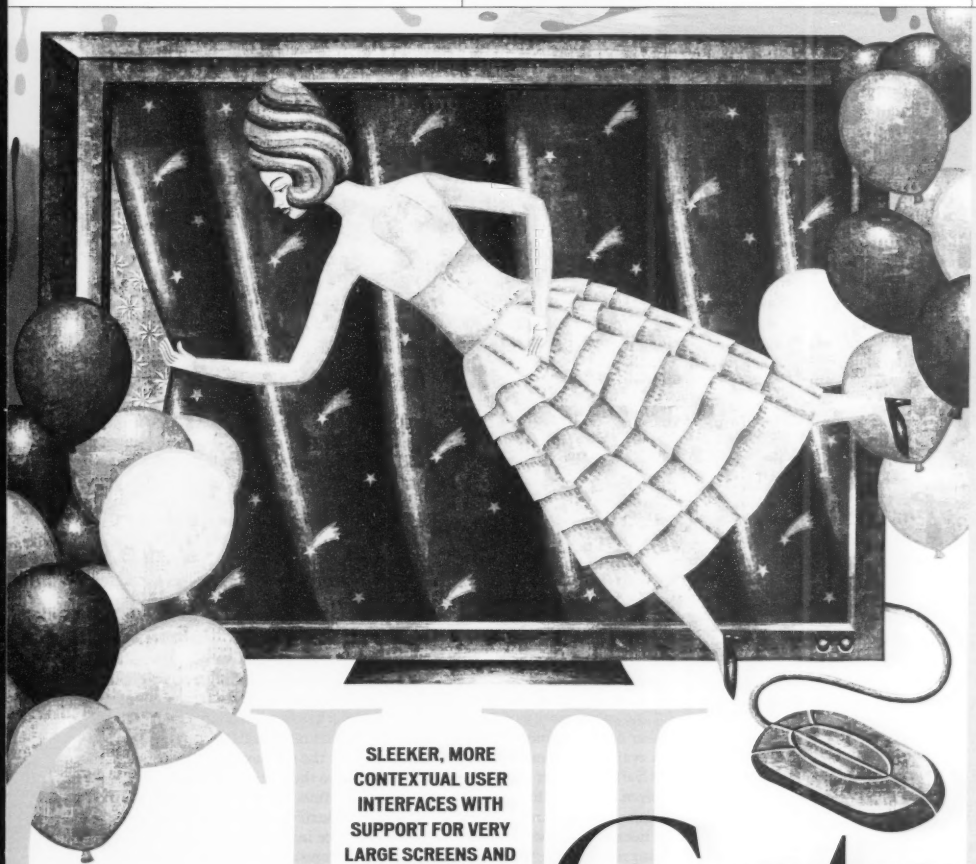

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The increased complexity of today's computer systems is forcing change upon the GUI. As the number of features has exploded, users have been overwhelmed with layer after layer of icons, tool bars and menu options.

Both Office 2007 and Vista include user interface changes designed to the reduce visual clutter and help users find what they're looking for. Vista's

Thumbnail Taskbar, for example, shows images of running applications in the task switcher or when the user moves the cursor over program icons in the taskbar. Live icons allow similar visual navigation for documents. A new Sidebar feature introduces a transparent pane of "Gadgets" — single-function applets such as a clock or calendar. And Aero's 3-D effects make the desktop appear less cluttered by making windows transparent.

Office 2007 tweaks include previews that show how selected text will look when the cursor hovers over a style option, and font options that now show what the desired font looks like. But the biggest changes Microsoft has made involve the removal of traditional pull-down menus and the introduction of a contextual ribbon bar.

Perhaps no productivity software has suffered more from features bloat than Microsoft Office, so it's no surprise that Microsoft has attacked this problem in Office 2007.

"Creators of the paradigms of menus and tool bars never anticipated that software would be able to do as much as it does today," says Jensen Harris, principal lead program manager for Office. While Word and other early programs had 10 to 30 features each, the word processing application now has some 1,500 and the Office suite has more than 10,000.

As the number of features exploded, the preponderance of options overwhelmed the menus, tool bars and other mechanisms for presenting them. This left users searching for key features and unaware that others even existed. Attempts to reduce the clutter in Office, such as cascading menus, only added to the confusion. The Intelli-menu, a feature that removed menu options that weren't used recently, was designed to "reduce the perception of bloat in Office," says Harris. Instead, it annoyed users by making menus inconsistent and unpredictable, he explains.

So Microsoft has eliminated pull-down menus in the core Office 2007 applications, as well as in Vista's Internet Explorer and Windows Explorer programs. In Office, the primary applications now use a ribbon bar, which presents only those features that pertain to the currently selected object. The ribbon bar changes as different items, such as a table or paragraph, are selected.

Jakob Nielsen, a principal at Nielsen Norman Group, views contextual interfaces such as the ribbon bar as the wave of the future. "The only way that this amount of complexity is in any way capable of being controlled by humans is by . . . making it easier to use each feature," he says.

One alternative to contextualization is to reduce complexity by reducing features. But that's something that companies like Microsoft — which sell successive versions of software by adding features — are loathe to do. It's also not practical, because users want those features to be available even if they don't use them, says Steve Kleynhans, an analyst at Gartner Inc.

"People want more, yet they want it presented as less," Nielsen says.

By making more commands visible in each context, vendors hope people will use more of those whiz-bang features — what Harris calls "exposing the richness" of Office. But will they?

"The vast majority of users never bother exploring more of the capabilities available to them because users' motivation is to get things done," says Nielsen. That's a challenge not just because new features justify upgrades, but because users could also increase their productivity. "They're not advancing in skill level, [and] there is no good solution to that," Nielsen says.

Researchers are working on rolling up commonly used commands into higher-order functions. "The key of design is to try to figure out how you can cluster those low-level operations into a single higher-level operator that better fits your way of thinking," says Bill Buxton, principal researcher at Microsoft Research.

A simple example is the pen or stylus, which lets a user select and delete text in a single stroke. "The functionality is the same as cut and paste, but the number of steps taken and . . . the time taken are drastically reduced," Buxton says.

Morphing for Mobility

Mobile computing has placed a new set of demands on the GUI. As functions formerly handled on the desktop migrate onto mobile devices, providing consistency across those devices and adapting the user interface to different contexts doesn't always work well.

The GUI was originally designed for a stationary PC on a desktop. Initial attempts to extend it to mobile devices with Windows CE proved challenging. "With mobile, I don't want everything. I want what I need," says Jerome Nadel, vice president at usability consulting firm Human Factors International Inc. in Fairfield, Iowa. Newer versions have done a better job of offering the user shortcuts, he adds.

As the GUI evolves, it must adapt not just to the device but also to the user's situation. "The interface has to have the dexterity to let me work within the device in the context of where I am," Buxton says. For example, choosing voice commands may be preferable when using a PDA in a moving car, but the keypad is preferable in another context — a crowded airplane. Devices in the future could switch automatically, adapting to situations such as when the user is in a noisy area where voice commands won't work.

In PDA phones, the user interface can take advantage of location-based services to reduce complexity, filtering down search lists based on where the

Continued on page 26

Getting Personal

IN THE FUTURE, the user interface will take personalization to a new level, says Mary Czerwinski, principal researcher in Microsoft's Visualization and Interaction for Business and Entertainment (ViBE) group.

"We started by recording everything people did on the desktop," Czerwinski says. Now ViBE is testing wearable sensors to measure everything from the user's brain wave activity to his vital signs. That data will be used to adapt the user interface to the context in which the user is working.

"As we go forward, you're going to be recording everything about your life, and it's going to be available for display in any manner of ways" and on a range of devices, she says.

"The key will be coming up with the visualizations of that stuff that makes sense at the moment," Czerwinski says. She expects that computers will use the data to determine how to interact with the user. For example, brain wave activity data will allow the computer to decide what information to present and when.

"If [their] cognitive load is high, maybe you don't want to interrupt them," she says. Or if the user is talking, the computer could choose an alternative communication method rather than interrupt with a verbal message. "These visualizations are going to become huge in the next 10 years," Czerwinski says.

But the explosion in personal information will also create security issues that have yet to be worked out. "The privacy aspects are huge," Czerwinski says. Initially, users will keep data on the client. But as that data is shared across devices and in different social contexts, this sharing could get "a little scary," she says.

– ROBERT L. MITCHELL

With brain-wave sensors, computers can adapt to a user's cognitive state.

Private Eye/Hand Computing

MOST PEOPLE TODAY use a single device – the mouse – for pointing and navigation. They might alternate between using a touch pad and the mouse. But if each device works great alone, why not try the two together? Combining the use of a mouse with an alternative device such as a touch pad or digitizing tablet would let users get work done faster, says Bill Buxton, principal researcher at Microsoft Research.

Consider, for example, how a user navigates to a cell within a spreadsheet. Instead of using the mouse to navigate to the cell by operating the up/down and left/right scroll bars on the screen, the user could use a touch pad with one hand to locate the cell, and click the mouse using other hand to select it. "This results in a single, integrated action – kind of like what we do when driving," Buxton says.

Windows could support this today by adding a small piece of code, without requiring changes to the hardware, operating system or application, he says. But use of the standard mouse, which itself took 30 years to go mainstream, is now so ingrained that the idea hasn't taken off – at least not yet.

– ROBERT L. MITCHELL

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user is and what he's doing, says Nadel.

Some cross-pollination between the desktop and mobile GUI attributes is also occurring. Dual-mode user interfaces that include voice controls will go mainstream first on PDA phones but could eventually percolate up to laptops and desktops, Buxton says. A dual-mode interface is already in the works for Outlook/Exchange users, who will soon be able to access and change calendar appointments and e-mail on the road using either the PDA's graphical e-mail client or by calling in to an interactive voice response system.

Big-Screen Computing

"The best way to improve productivity is to give everyone a larger screen," says Ben Schneiderman, professor and founding director of the Human-Computer Interaction Lab at the University of Maryland. That's just around the corner, thanks to dropping LCD prices. But the desktop GUI doesn't scale up to larger screens very well — at least not yet.

The use of multiple displays will go mainstream by 2009, according to a Gartner report. Display sizes will increase to the point where 1920 x 1080 dpi resolution and 25-in. or larger screens will be common. By the end of the decade, computers may also incorporate secondary, lower-resolution e-paper displays that can maintain an image even when a laptop or desktop computer is turned off.

"In five to seven years, it will be cheaper per square foot to put up a 100-dpi electronic display than to have a whiteboard," says Buxton. That will lead to wider adoption of gesture-based input devices such as touch screens. "You'll be able to work on free-form, larger surfaces in the way a football coach does [on a whiteboard]," he says.

The Windows GUI is already evolving to support secondary displays. SideShow, a new feature in Vista, will enable users to view items such as calendars or to-do lists on secondary e-paper laptop displays that might be mounted on the top of the case.

"As [displays] get bigger and bigger, you can get more information to the user," says Mary Czerwinski, principal researcher at Microsoft Research. But the current desktop GUI, which simply extends the same desktop across multiple screens, doesn't scale well. With more screen real estate available, computers will begin monitoring and presenting more information to the user.

"You'll have a focus area that's easy to grok," Czerwinski says. "But then you will have all of these peripheral things you're monitoring. These need to be glanceable." Peripheral objects that might be automatically exported to secondary screens include things like the single-function Gadget applets in Vista's Sidebar.

"The screens themselves will wind up being contextual," says Gartner's Kleynhans, and the ability to arrange objects spatially will become more important. Multimedia elements such as video will be integrated as just another window or information feed, like the stock ticker programs available for Windows.

"People need to be able to bring up a video and still have other information presented in a transparent or translucent way on top of that video," says Kleynhans. He thinks GUI designs could do more with 3-D technology as a navigational aid. That work needs to go beyond current efforts like Aero's 3-D effects in Vista, which he dismisses as "eye candy."

Buxton says that will happen. "We can take the skills that we've learned from living in the everyday 3-D world and use it to help us navigate through the information space of computers," he says. One challenge with 3-D is the complexity and processing overhead required. But, says Buxton, "we can get 80% of the benefits for 20% of the complexity if we design it right."

For example, a 3-D metaphor could be used as a navigation tool — even if the objects are two-dimensional. In this context, a camera phone would be used to navigate through a 2-D spreadsheet on-screen by moving the camera to pan back and forth or zoom in or out.

The technology to do so already exists in today's PDA phones, Buxton says. "If you do a real-time analysis of the signal from a smart phone's camera, you can determine all you need to drive the content of the digital information on the screen," he says.

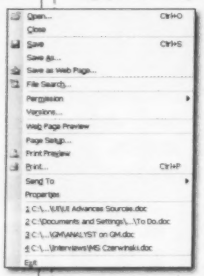
As personal computing changes and fragments, the GUI is evolving with it. "There is a different way to think of interaction as we move to different devices and different places [for] using them," Buxton says. Researchers have plenty of ideas for enhancing the user interface to meet that challenge. The hard part for Microsoft and other vendors will be deciding which ones will be a hit with users.

GUI Gaffs

Sometimes innovative GUI features don't work out. User interface design experts weigh in on a few.

ADAPTIVE MENUS

Now you see them . . . now you don't. Microsoft Office's Intellimenus – an attempt to determine which menu items should appear based on usage patterns – only increased user confusion.



A move to rafted tool bars, where two tool bars might share the same space and the computer decided which would appear based on use patterns, created similar problems.

"When you migrated from the short to the long menu, the [missing] items didn't show up at the bottom of the list, so you had to rescan the whole list," says Jensen Harris, principal lead program manager for Microsoft Office. "Not knowing what was on the menu confused people. What was on your menu was different from my menu, or if you went on vacation, things would disappear."

Microsoft has pulled back from this idea. "We had design tenets for Office 2007 that said, 'Don't do adaptive behaviors,' " he says.

THE LOCATION-BASED METAPHOR

Another failed attempt at a GUI innovation, Apple's eWorld, "was too reliant on the metaphor for moving though space," says Jakob Nielsen, a principal of Nielsen Norman Group. "Walking around on the screen is too much effort. In the physical world, you have to move, but in the computer world, why not just click on what you want? Why simulate something that has a more awkward interaction style?"

Microsoft's "Bob" offered a similar experience. "They used the rooms metaphor, and it was not helping people perform tasks and simplifying those tasks," Nielsen says.

CLIPPIE AND OTHER ANTHROPOMORPHIC USER AGENTS

Anthropomorphic user agents such as "Clippie," the animated character used in the Office help system, evoked strong negative reactions from many users. "The trouble with Clippie is that it gets in your face," says Don Norman, a principal of Nielsen Norman Group.

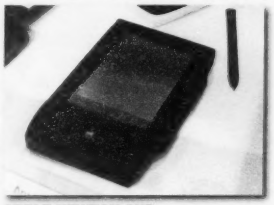
What's more, the advice it offers often isn't useful because it's trying to infer the user's intentions. "[People] have enough trouble trying to infer another person's intentions," Norman notes.

"Why would my computer be any good at it?"

"People like controllable, predictable, comprehensible and consistent user interfaces, not adaptive, anthropomorphic and agent-based [ones]," says Ben Schneiderman, founding director of the University of Maryland's Human-Computer Interaction Lab. "It's a distraction, and it takes control away from the user."

But acceptance of anthropomorphic characters also hinges on cultural preferences, says Schneiderman. "In Japan, the use of avatars is pervasive. Even if you're at a kiosk buying a subway ticket, there are little avatars bowing to you," he says.

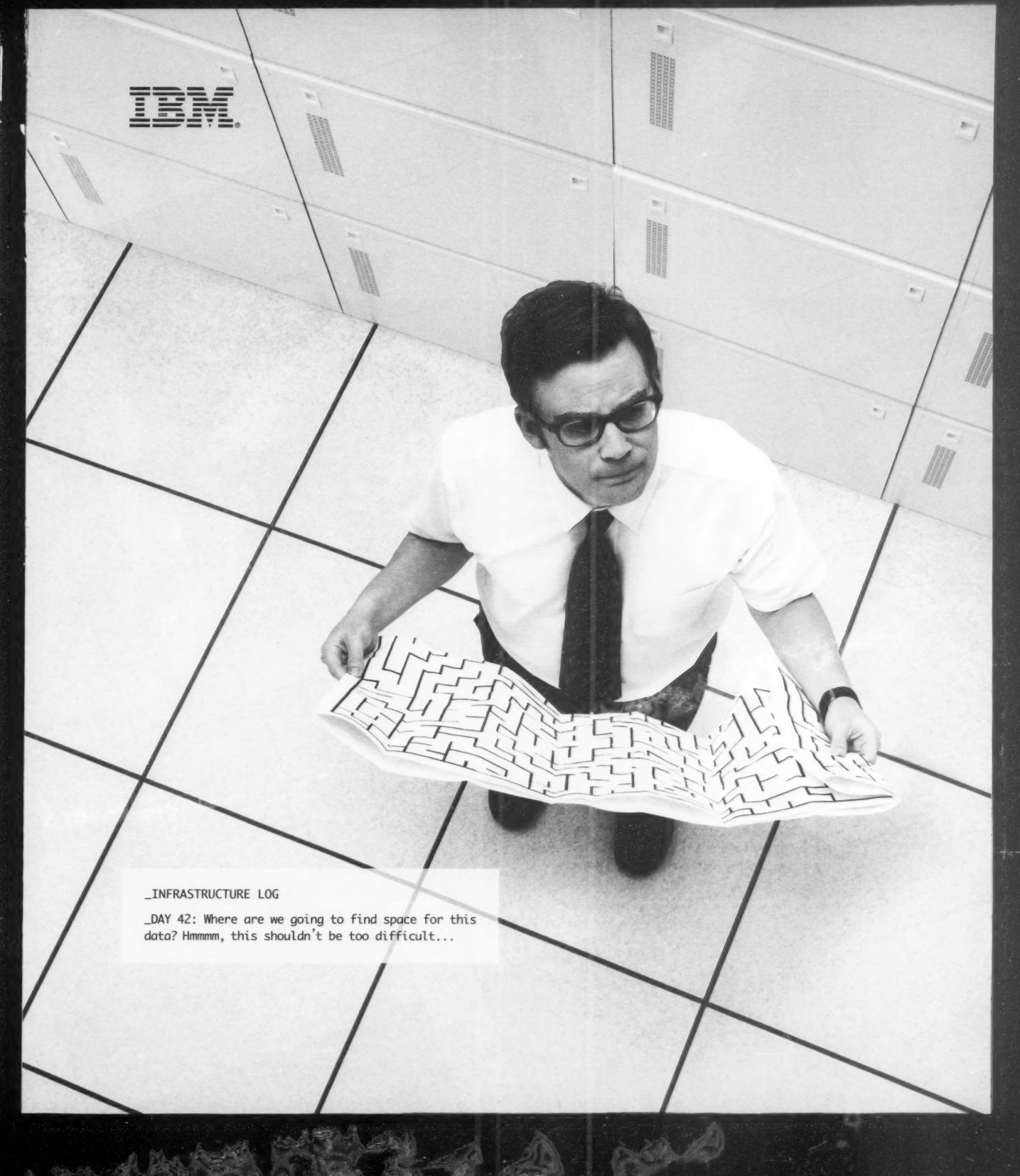
Intelligent agents can work, says Jerome Nadel, vice president at Human Factors International. "The way that was implemented by Microsoft was clumsy and cheesy. But in [Apple's] Knowledge Navigator, you had this humanoid that could speak back to you and be your agent. The idea of agents is arguably good."



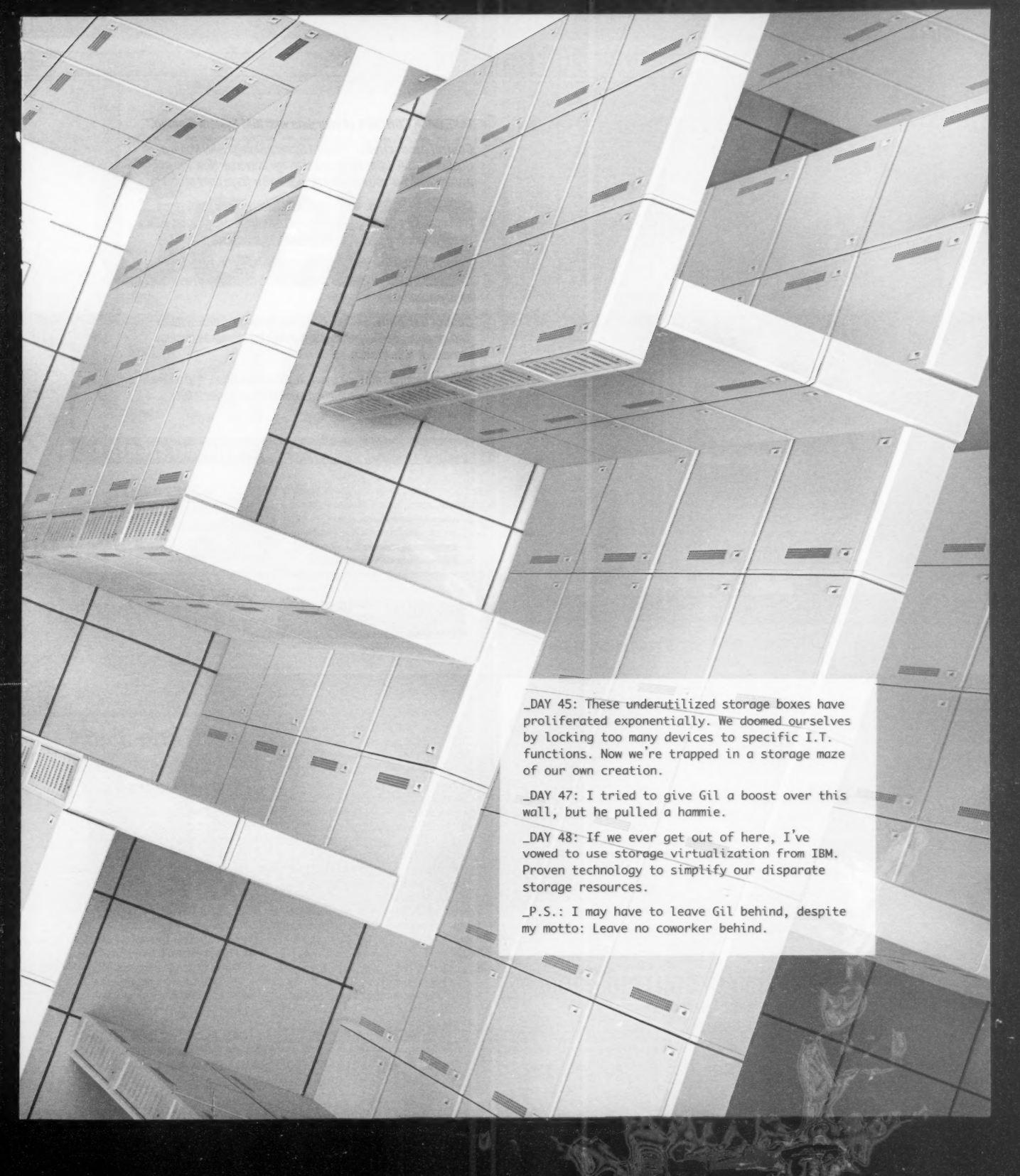
APPLE NEWTON AND HANDWRITING RECOGNITION

Apple's Newton "didn't work because handwriting recognition at the time was too primitive," says Nielsen. "But the pen-based interface was highly integrated. Instead of copy and paste, you could drag [text] to the side of the screen and move it back in. The shame is that they abandoned it instead of allowing it to grow."

– ROBERT L. MITCHELL


IBM
_INFRASTRUCTURE LOG
_DAY 42: Where are we going to find space for this data? Hmmmm, this shouldn't be too difficult...

IBM

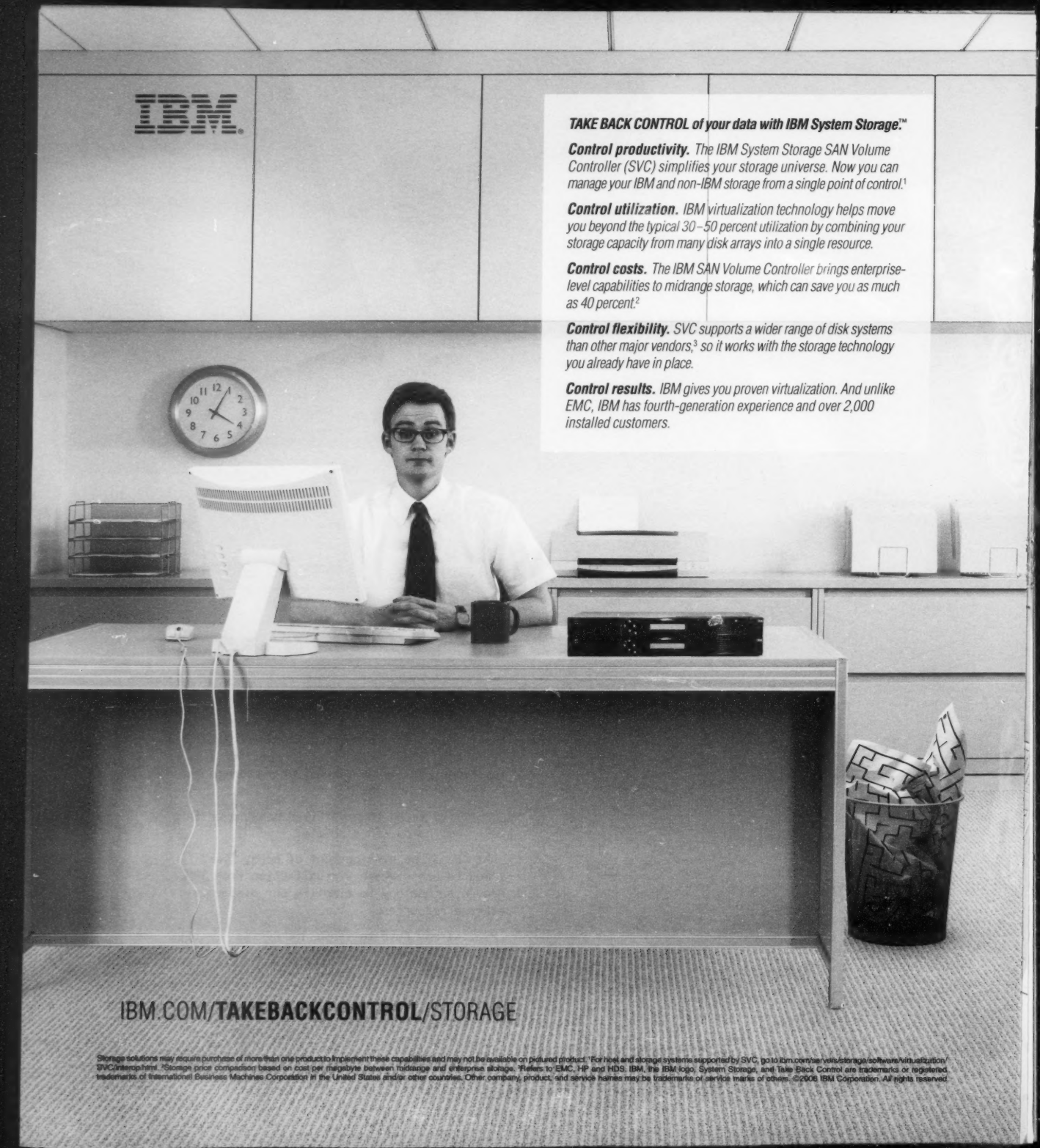


_DAY 45: These underutilized storage boxes have proliferated exponentially. We doomed ourselves by locking too many devices to specific I.T. functions. Now we're trapped in a storage maze of our own creation.

_DAY 47: I tried to give Gil a boost over this wall, but he pulled a hammie.

_DAY 48: If we ever get out of here, I've vowed to use storage virtualization from IBM. Proven technology to simplify our disparate storage resources.

_P.S.: I may have to leave Gil behind, despite my motto: Leave no coworker behind.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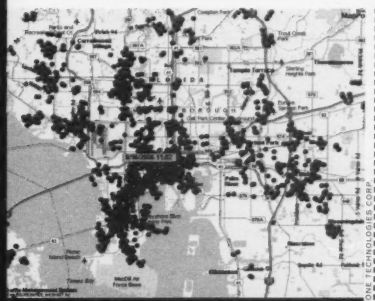
Storage solutions may require purchase of more than one product to implement these capabilities and may not be available on pictured product. [1]For host and storage systems supported by SVC, go to ibm.com/servers/storage/software/virtualization/svc/interop.html. [2]Storage price comparison based on cost per megabyte between midrange and enterprise storage. [3]Refers to EMC, HP and HDS. IBM, the IBM logo, System Storage, and Take Back Control are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Other company, product, and service names may be trademarks or service marks of others. ©2006 IBM Corporation. All rights reserved.

Geek's Garden

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE



A snapshot from a single carrier's network in Tampa, Fla.; the blue dots represent all active mobile phones.

INTELLIONE TECHNOLOGIES CORP.

Monitoring Traffic in Real Time From the Comfort of Your Car

ENGINEERS HAVE DEVELOPED a system for taking anonymous cell phone location information and turning it into an illuminated traffic map that identifies congestion in real time. The system takes advantage of the steady stream of positioning cues – untraced signals that all cell phones produce, whether in use or not, as they seek towers with the strongest signals. It's the first traffic technology that monitors patterns on rural roads and city streets as easily as on highways.

Developed by IntelliOne Technologies Corp. in Atlanta, the TrafficAid system could not only help to guide drivers around tie-ups, but also tell emergency responders where accidents are or how effectively an evacuation is unfolding by pinpointing clusters of cell phones.

"Unlike sensors and other equipment along major freeways that is expensive and takes years to deploy, our system takes advantage of existing cellular networks in which wireless carriers have already invested billions of dollars," says National Science Foundation (NSF) award winner and IntelliOne CEO Ron Herman, a former engineer and computer scientist.

Herman was inspired by a friend's demonstration several years ago of proof-of-concept Palm software that used real-time California Department of Transportation travel-time data to route drivers around traffic snarls.

"I was completely sold," says Herman. "I believed then the next killer app for mobile would demand live traffic data for every road – not just select highways equipped with speed sensors – and set out to make it happen."

Creation and development of TrafficAid was supported in part by a grant from the NSF's Small Business Innovation Research program.

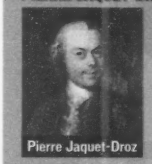
"IntelliOne's capabilities extend beyond the consumer to include support for logistics and fleet management," says Errol Arkilic, the NSF program officer who oversees the IntelliOne award. "With real-time management in response to traffic conditions, fleet operators could significantly improve delivery times, reducing fuel and labor costs."

Because TrafficAid does not use personally identifiable data, the servers that generate position and traffic information don't know whose phone is showing up in the data stream, only that a particular phone at a given location is moving at a given speed. From this information, IntelliOne uses its Mobile Positioning System to convert ordinary signaling data into phone locations at a rate of two times per second. The locations are then passed to the company's Traffic Determination Engine, which matches each phone to the correct road and monitors it with other phone locations to produce average speeds and travel times for all roads with cell coverage.

PAGE COMPILED BY TOMMY PETERSON.

DIFFERENCE ENGINES

Calculating Dolls



Pierre Jaquet-Droz

PIERRE JAQUET-DROZ, a Swiss-born watchmaker of the late eighteenth century who lived in Paris, London and Geneva, designed and built animated dolls, or automata, to help his business sell watches and mechanical birds.

Between 1768 and 1774, Jaquet-Droz, his son Henri-Louis and Jean-Frederic Leschot constructed the Writer, a male figure that was made of 6,000 pieces and could write a set message of up to 40 characters; the Harmonium Player (2,500 pieces), a female figure that could play five songs composed by Henri Jaquet-Droz; and the Artist (2,000 pieces), a male doll that drew several pictures. These astonishingly complex mechanisms were demonstrated to the world's most important people: the kings and emperors of Europe, China, India and Japan.

The Writer

These dolls, especially the Writer, were forerunners of today's computers. The Writer employed tabs that enabled the operator to input the messages to be written. The tabs acted like a short-term memory. A series of 40 cams, each of which represented a letter, acted as the program, and the Writer's quill pen was the output device.

The work of Jaquet-Droz predates that of Charles Babbage by decades.

The automata of Jaquet-Droz are considered to be some of the finest examples of human mechanical problem-solving. Three particularly complex and still-functional dolls are housed at the art and history museum in Neuchâtel, Switzerland.

The Harmonium Player

GROVES OF ACADEME

Physicists Can Turn Single Molecules Into Working Transistors

IN A BREAKTHROUGH needed to make the next generation of tiny, powerful computers, University of Arizona physicists have discovered how to turn single molecules into working transistors. Industry now uses transistors as small as 65 nanometers. With the Quantum Interference Effect Transistor, nicknamed Quiet, the UA physicists propose making transistors as small as a single nanometer, or one billionth of a meter.

"All transistors in current technology regulate current flow by raising and lowering an energy barrier," says UA physicist Charles A. Stafford. "[This] has worked for a century of switches, but that approach is about to hit the wall."

Transistors can't shrink much smaller than 25nm because scaling down further creates intractable energy problems, Stafford says. Even if it were possible to build a laptop computer with molecule-size transistors using current technology, it would take a city's worth of electricity to run the laptop, and it would vaporize from the heat.

Stafford and colleagues Sumit Mazumdar and David Cardamone realized that quantum mechanics could solve the problem of how to regulate current flow in a single-molecule transistor that would work at room temperature. "We can regulate how electron waves combine to turn the transistor on or off," Cardamone says.

The molecule the researchers propose for a transistor is ringlike benzene. They plan to attach two electrical leads to the ring to create two alternate paths through which current can flow, and then attach a third lead opposite one of the electrical leads.

Other researchers have succeeded in attaching two contacts to a molecule this small, but attaching the third is the trick – and the point. The third lead turns the device on and off. The transistor is turned on by changing the phase of the waves so they don't destructively interfere with each other, opening up additional paths through the third lead.

"It took a while to go from the idea of how this could work to developing realistic calculations of this kind of system," Stafford says. "It took some time to put in all the electron interactions that demonstrate this really is a very robust device."

The discovery made by physicists (from left) Sumit Mazumdar, David Cardamone and Charles A. Stafford may advance next-generation computing.

LORI BITLER

LAMP

DEFINITION

LAMP is an acronym taken from the initial letters of a set of free software programs commonly used together to run dynamic Web sites or servers. The components are Linux, Apache and MySQL, with the final "P" standing for any of three scripting languages: PHP, Perl or Python.

BY RUSSELL KAY

IN THE jargon-laden world of IT, new terms are created as shorthand ways of referencing or discussing otherwise cumbersome phrases. One addition to the lexicon that has gained increased popularity and use is LAMP, which refers to a group of free, largely open-source software that forms the basis of many — maybe most — Web servers in use today. LAMP has four components: Linux, Apache, MySQL and Perl, PHP and/or Python. (There are often variations on Linux and MySQL as well.)

While these programs were not specifically designed to work with one another, the open-source ethos and community-based development efforts made interoperability a strong focus and helped make this combination a popular and highly reliable choice. The fact that all are available to use for free didn't hurt either.

In brief, here are the elements that make up LAMP.

Linux is, of course, the open-source operating system kernel originally created by Linus Torvalds and based loosely on Unix. From its university student, hobbyist roots, Linux has become a family of highly reliable operating systems that are used by both large and small organizations worldwide.

Thanks to the large open-source development community for the operating system kernel itself, individual development groups for the many different distributions, and a number of commercial versions that are supported by credible vendors, Linux is regarded as a safe, reliable choice for many server applications.

QUICK STUDY

Apache is, hands down, the most widely used Web server on the planet. Apache has been an open-source effort from its beginnings around 1995 and is controlled by a group called The Apache Software Foundation. As of August 2006, according to a survey by Netcraft Ltd., Apache served 62% of all Web sites on the Internet and is clearly the world's most popular Web server, although in recent months it has been losing market share to Microsoft Corp.'s Internet Information Server. Still, Apache remains the de facto reference platform against which all other Web servers are judged.

MySQL is a multithreaded, multiuser, SQL-based database management system with more than 6 million installations. Unlike the other components, MySQL is not open-source but has been copyrighted and owned by a single for-profit company since its 1995 inception. Uppsala, Sweden-based developer MySQL AB makes it available as free software under the GNU General Public License but also dual-licenses it under more traditional, proprietary arrangements in situations where the intended use is incompatible with the GPL.

PHP, Perl and Python are the programming languages of choice in most LAMP and LAMP-like installations. Besides starting with the same letter of the alphabet, all are characterized as concise, compact scripting languages that can allow a user to execute a program on the Web server from within a browser window.

The use of scripting languages started with the Common Gateway Interface Web interfaces of the early 1990s, simplifying the delivery of Web pages with dynamic, updated content in addition to static, unchanging pages.

Programmers preferred scripting languages for these applications because they made it relatively easy to manipulate text streams from a variety of sources.

INTERCHANGEABLE PARTS

LAMP has become a general designation indicating a Web platform that developers often construct from a variety of software components. Below are a few of the most common options.

L: Linux, FreeBSD, NetBSD, OpenBSD, Microsoft Windows, Darwin/Mac OS X, Novell NetWare

A: Apache (the most consistent element in this shifting acronym)

M: MySQL, PostgreSQL, Firebird SQL or Oracle

P: PHP, Perl, Python, Ruby or Groovy

PLAYING THE ACRONYM GAME

HAS ANY AREA of modern life (with the possible exception of the military) ever been as much in love with acronyms as is the world of computers and IT? For better or for worse, IT writing and conversation are littered with uppercase letters, pronounced as words or occasionally spelled out, that have been given entirely new meanings in this techno age. In fact, I recall a job interview during which I was quizzed for several minutes on the meanings of dozens of popular acronyms.

Some acronyms were decided upon first, and then the "full name" was chosen to fit the desired letters. For example, in the early days of the home computer, Commodore International chose the name PET for its first model, and then made up the "official" name from which the acronym was supposedly taken – Personal Electronic Transactor.

And sometimes acronyms take on a life of their own. Consider the PCMCIA card slot that is included in almost every laptop. This originally stood for Personal Computer Memory Card International Association, but it was widely used as "People Can't Memorize Computer Industry Acronyms." And then there's the TWAIN standard for interfacing with scanners, which stands for "Thing Without An Interesting Name."

– RUSSELL KAY

The acronym LAMP was coined by writer Michael Kunze in an article in the December 1998 issue of German computing magazine *Computertechnik*. Kunze was trying to show that a bundle of free software could be a feasible alternative to expensive commercial packages. Since then, publisher O'Reilly & Associates and MySQL have worked to popularize the term.

Platform or App Stack?

Many refer to LAMP as a stack, a layered grouping of basic business software. These layers are comparable with the ones that make up commercial stacks like Microsoft's .Net framework. When used in combination, they support application servers.

Competing stacks of commercial middleware include unified application development environments such as .Net, IBM's WebSphere, Apple Computer Inc.'s WebObjects and Sun Microsystems Inc.'s Java Enterprise Edition. But whether we call LAMP a stack or a platform, it clearly qualifies as having an interlocking set of technologies on which developers can build and deploy applications.

Is LAMP ready for use inside the enterprise? Yes and no. It's already used to run high-volume Web sites, such as the O'Reilly Network. Major chunks of Internet giants such as Amazon.com Inc. and Google Inc. use LAMP systems and networks. But you probably wouldn't want to run your core financial systems on LAMP; until recently, MySQL didn't even understand the notion of a transaction.

By itself, LAMP really only defines software for Web applications. Although you can use it to build an application that connects to sophisticated middleware, the heavy-duty programming would likely have to be done in a different language.

The .Net and Java platforms, in contrast, offer a way of writing both Web scripts and complex enterprise applications in the same language.

Still, LAMP is likely to be popular with price-conscious organizations that have strong internal development efforts and are comfortable with peer-based support. Does that fit your company's environment and culture?

Kay is a Computerworld *contributing writer in Worcester, Mass. You can contact him at russkay@charter.net.*

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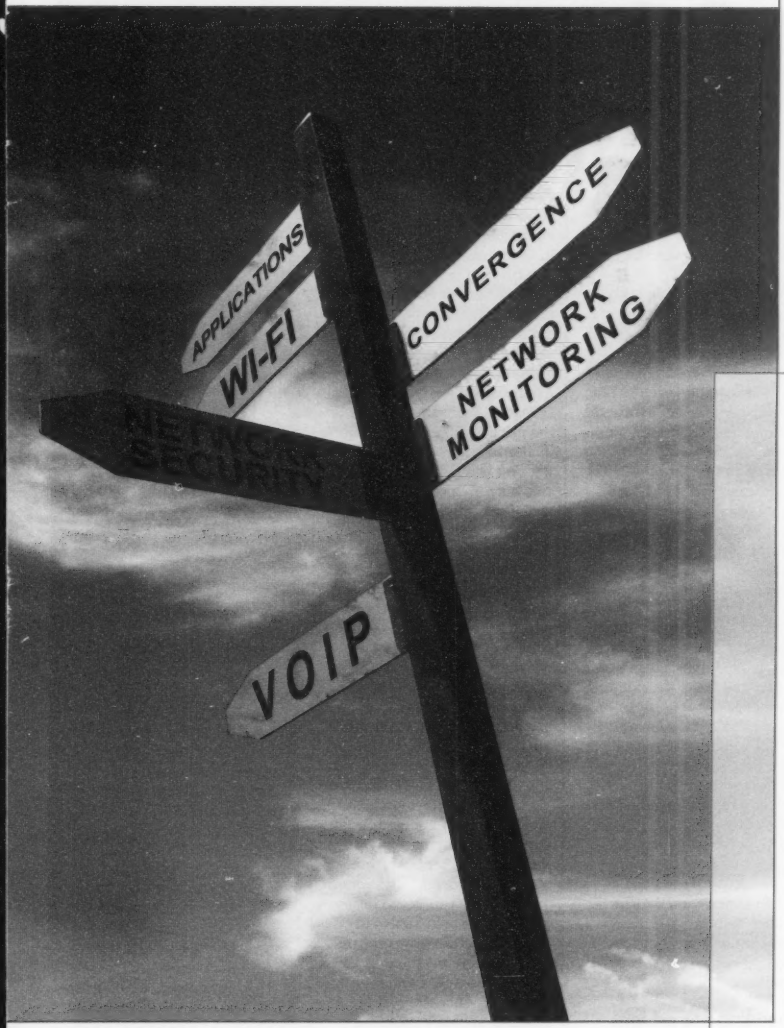

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Cutting Through the Fog of Security Data

Our manager has a momentary mental lapse as she tries to get a handle on the data her security tools produce. By C.J. Kelly

SECURITY MANAGER'S JOURNAL

THE PAST few weeks — nay, months — have been filled with people, process and project issues. I wondered if I would ever get any real work done. Real work to me is security work, not "adminisdribble."

One of the worst aspects of adminisdribble is that it buries me in paperwork. And the paperwork is following me into the security realm. The agency used to get by without much documentation; as long as we had log files to reference when a situation arose, we were OK.

Nowadays, though, it seems as if everything needs to be documented, with audit logs pulled together for management, auditors and attorneys. It's getting in the way of our real security work, so we have to get on top of it.

I have a vision in my mind: to be able to show anyone who needs it the security profile of the agency at any given moment. It would take all the data that we're generating from routers, intrusion-detection systems, firewalls and a multitude of other security tools and organize it for easy, at-a-glance digestion.

We certainly have no dearth of data. This past summer, we bought half a dozen new and beefy servers. One we designated as the security server, for housing the security software and log files. Only three people have access to it. We also purchased security software and appliances that let us monitor and document activity on the network.

We have router and firewall logs, intrusion-detection logs, network-monitoring data, Web server logs, and server event and performance-monitoring logs. We can even garner log files from every computer in the agency. We can document everything that happens on the network — what goes out and comes in, and who accesses what and when.

It's all a bit overwhelming. Who's going to monitor all this stuff and correlate the data?

Networking specialists understand the concept of setting a baseline: becoming familiar with what normal activity and thresholds are, so that when abnormal activity pops up or normal thresholds are exceeded, you can spot it. That's the sort of thing we have to set up with all our new security toys so that we will receive alerts when real anomalies or malicious patterns are detected. It would be an acceptable practice to just eyeball the log files, looking for anything out of the ordinary. Unfortunately, we don't have enough eyeballs to do that adequately. And my staff is overworked as it is, leading to fatigue, distraction and competition with higher priorities.

It's all a bit overwhelming. Who's going to monitor all this stuff and correlate the data?

As I was struggling with this issue, a faint light began to shine inside my tired head. Haven't I seen this movie before?

Yes, of course — it was all coming back to me. (Honestly, I think I have "sometimers" disease; sometimes my mind is sharp as a tack, and other times it's as dull as a board!) As my mind cleared, it suddenly became obvious to me that the problem we were facing is fairly common and already well defined.

The sorts of tools we need do exist. They gather up gigabytes of network computing data, parse it into a common format and correlate events from a variety of systems. They identify threats, potential and otherwise, and sometimes even present the data in a graphical format as well as a report format. These sorts of tools used to be called SIMS — security information management systems. Now, as they move into the third and fourth generation, they have fancier names. See? I really do know something about them. If only I could remember the details . . .

Shedding Some Light

In fact, we had dealt with this problem at the last company I worked at before joining the public sector. I just couldn't seem to remember how we solved it.

I called my colleague Mark, who was still working in security at my previous employer. He could fully illuminate the dim corners of my mind that I was having trouble peering into — and he's a friend, so he wouldn't laugh too much about my deteriorating mental processes. In fact, he gushed about how much he missed me. Finally, I asked my question: "Hey, Mark, what did we end up using for event correlation? Didn't we have the guys from ArcSight in to do a demo?"

Yes, he said, we had reviewed ArcSight's Enterprise Security Management product, but although it was impressive in functionality, we were quoted a price of $150,000. That was too rich for our blood at the time. We then determined that the second-best tool available for our needs was Cisco Systems' Security Monitoring, Analysis and Response System (MARS). According to Mark, the price had been right. And, he reminded me, Snort is still the best thing going in intrusion detection, and the log files feed right into MARS.

I jumped on e-mail and requested a quote for MARS from the state's preferred vendor. Then I went to Cisco's site to read up. I needed to know which log files or syslogs are compatible with the system. Of course, all the Cisco stuff is compatible — NetFlow and syslog data from Cisco routers, firewalls, switches, concentrators, intrusion detection and so on. It can pull data from almost any SNMP- and syslog-enabled device as well as from a host of vulnerability and antivirus systems, host operating systems, Web servers, Web proxy devices and database servers.

A tool like this could be just what I need to solve my data correlation problem, and it might solve my paperwork problem as well. I might be able to produce the sort of monthly security profile report I've dreamed about. Now that I feel as though my brain functions have been restored, I need to find out more and make this happen.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Revenues Rose in 2005

Statistics from Gartner Inc. indicate that worldwide security market revenues in 2005 rose 14.8% over the previous year's $7.4 billion. Sales of antivirus software boosted the figure by $4 billion.

Sensitive Data Put Out With the Trash

Following the buyout of a telemarketing company in Indianapolis, employees found personnel files and consumer data in the trash. The employee files included photocopies of driver's licenses and Social Security cards. Federal law requires businesses to take measures to destroy personal data beyond simply tossing it in the trash.

Server Breached at Texas University

A security breach of a server at the University of Texas at San Antonio is being investigated. The compromised server contains four years' worth of data, including names, addresses and Social Security numbers. Some 53,000 current and former students and 11,000 current and former employees received letters telling them about the breach. A UTSA spokesman said the breach was detected before information could be taken.

Katrina Leads to USDA Move

The U.S. Department of Agriculture plans to move its National Finance Center data processing hardware from New Orleans to Denver to protect it from the threat of hurricanes. The agency temporarily moved the hardware to Philadelphia following last year's Hurricane Katrina. Permanent relocation is expected in spring 2007.

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BRIEFS

Cognos Delivers Mobile BI With RIM

■ Last week, Cognos Inc. announced plans for a mobile version of its business intelligence suite and an alliance with Research In Motion Ltd. Cognos 8 Go Mobile, scheduled to be available in the first half of next year, will allow BlackBerry users to view, interact with and refresh BI reports, analysis and metrics within Microsoft Office, according to Cognos. The mobile version will integrate and use existing security mechanisms in Cognos' BI tools to allow enterprises to employ a single security system for all users. Pricing was not available.

Black Duck Updates Compliance System

■ Black Duck Software Inc. has announced Version 4 of its software compliance management system, ProtexIP. The software helps companies manage software component licenses throughout the application development process, according to the vendor. The new version includes an AJAX graphical user interface, a streamlined visual workflow, an obligation checklist and code-matching technology. ProtexIP 4.0 will be available in mid-November; annual subscriptions for the software will include customer support. The Professional Edition starts at $9,500, and the Enterprise Edition starts at $25,000.

Hyperion Announces Google Support

■ Hyperion Solutions Corp. has announced support for the Google OneBox for Enterprise. Hyperion said users will be able to access BI-related dashboards, reports and other unstructured corporate content and financial applications. Through the Google-powered search window, users will be able to find query answers, with data originating from relational and multidimensional sources. Due by year's end, the Google search option will be accessible through Hyperion's System 9 tools.

MARK WILLOUGHBY

Get the SOA Management Picture

THE MARCH to service-oriented architectures makes a picture worth 10,000 lines of software code, as a new generation of visual tools helps IT to manage the layers of complexity embedded in reusable components.

MARK WILLOUGHBY, CISSP, is a 20-year IT industry veteran and journalist. Contact him at willoughby@earthlink.net.

Only visual management tools can meaningfully correlate and present the choking amounts of information needed to gauge the performance, reliability, availability and security of SOA systems ("artifacts" for purists).

Start with all the information collected by your garden-variety SOA ERP system, which typically uses thousands of software components that constantly exchange messages among themselves. Each of these messages transiting the SOA enterprise service bus (ESB) must be parsed for critical operational, security and compliance data.

As a test of believing without seeing, the problem of managing service artifacts rivals that of proving the existence of dark matter lurking around the universe. Gone are the halcyon days of correlating empirical performance observations with data, application and network infrastructure variables from tables or log files.

The use of sophisticated visual design tools such as the Unified Modeling Language from the Object Management Group (*www.omg.org*) to develop complex SOAs and artifacts was the driver for postdeployment visual management tools. Providing adequate security and management for complex SOAs designed with visual tools naturally led to extending visual management into the operational domain.

Adding compliance to an SOA system turned what was already a huge data management challenge into a critical situation demanding new approaches. Corporate compliance policies must be enforced across the many levels of communication and interoperation among software components. Compliance mandates further specify that the development domain be separated from operational deployments, and IT auditors added urgency to the need for better management tools.

SOA governance means controls to enforce authentication, access control and authorization policies for users and software artifacts. These governance policies must be enforced across all artifacts in an SOA solution, to the lowest SOAP messages between artifacts in the separate development and runtime operational domains.

Only a well-designed visual tool has any hope of quickly conveying the wealth of SOA governance information required of every artifact and every message in a meaningful way. Further complicating SOA governance is the need to maintain controls across the service life cycle as the artifact is reused elsewhere.

SOA governance controls have been identified for artifact registration, location, binding and profiling, presenting an enormous number of details to manage in an SOA with thousands of components. Double this for SOA development and runtime operations, each of which has a unique method of gathering the needed management information.

In the development domain, SOA governance information comes primarily from the registry, a repository of critical SOA information and the initial policy enforcement point for security controls. SOA governance requires maintaining registry information on the number and usage of artifacts, authenticated users and what they are authorized to do.

The registry, typically based on the UDDI standard, must be protected from unauthorized users and rogue services. Unsuccessful access and usage must be correlated and displayed.

In SOA runtime operations, policy enforcement shifts to software agents monitoring communication among artifacts. Information must be graphically correlated on the following: valid and invalid packet headers and payloads moving across the ESB, the sources and destinations for both valid and invalid packets, and policy invocations and actions.

In addition to the registry and software agents, key elements of SOA governance include service location, service bindings and service profiles. Each presents a visualization problem to correlate the invocation of SOA artifacts with the user, along with some component life-cycle information.

Service location requires visual correlations among software component locations for authorizing use of an artifact or its information. Service bindings provide a visualization opportunity for correlating information about automated or manual bindings and authorization controls for the newly bound artifacts.

The service profile allows component reuse by different artifacts, each in a unique service life-cycle stage. Visual displays correlate the usage of each unique instance of the component as different controls are applied in component reuse by artifacts representing different risk thresholds.

This is just a 50,000-foot view of the data correlation and display issues introduced by SOA governance, suitable for framing.

SOA governance data will invariably be blended with traditional network and systems management graphics in pursuit of the enterprise "manager of managers" console display.

Finely tuned SOA governance visual correlations can quickly turn chaotic information into a clear picture when combined with information from external management consoles. ▸

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Got Questions About Application Performance?

Computerworld's IT Executive Summit Has the Answers

Today's businesses are challenged in delivering high perfomance applications. Whether it's system complexity, overcoming the barriers to enabling rapid change and collaboration, or discovering problems too late to effectively fix them, the hurdles are daunting for those leading today's application deployment.

To overcome the obstacles, IT managers need to identify and elimate performance production problems early and build performance into applications from the earliest phases of the development life cycle, rather than attempting to test too late.

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8:40am to 9:20am	**Market Overview and Trends** Michael Hugos, Computerworld Columnist, Former CIO and Author of *Essentials of Supply Chain Management* and *Building the Real Time Enterprise: An Executive Briefing*
9:20am to 10:00am	**Application Performance at Agriliance: An End User Case Study** Steven John, Chief Information Officer, Agriliance
10:00am to 10:15am	**Refreshment and Networking Break**
10:15am to 10:50am	**Application Performance Assurance Case Studies: It Pays to Be Predictable** Andrew Hittle, Vice President, Quality Assurance Solutions, Compuware
10:50am to 11:25am	**IT Performance at the University of St. Thomas: A Community Case Study** Sam Levy, Vice President and Chief Information Officer, University of St. Thomas and Randy Sauter, Director of IT, University of St. Thomas
11:25am to Noon	**Panel Discussion** Moderator: Julia King, Executive Editor, Events and National Correspondent, Computerworld Panelists: Steven John, Chief Information Officer, Agriliance; Sam Levy, Vice President and Chief Information Officer, University of St. Thomas; Randy Sauter, Director of IT, University of St. Thomas; Michael Hugos, Computerworld Columnist, Former CIO and Author of *Essentials of Supply Chain Management* and *Building the Real Time Enterprise: An Executive Briefing*

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Q&A

Political Correctness Revisited

Harvard Business School's Robin J. Ely explains how political correctness can get in the way of constructive, engaged work relationships, and what you can do about it. **PAGE 42**

IT MENTOR

What Kind of IT Shop Are You Running?

Here's a quiz to help you find out. It will also help clarify what your business executives are expecting from you. **PAGE 43**

ADVICE

Managers' Forum

When it comes to the "operations" side of the business, IT doesn't make the cut. Paul Glen discusses why. And a reader takes him to task on the do's and don'ts of performance reviews. **PAGE 46**

COP CERTIFIED OUTSOURCING PROFESSIONAL

New designations and **degree programs** may raise outsourcing expertise to a career path.

WILLIAM METZ, external business development manager in business services and IT at Procter & Gamble, is among the first 13 people to earn the COP designation.

JOE HARRISON

By Mary K. Pratt

GODFREY PINTO has great credentials. He has three master's degrees, including an MBA, and a bachelor's in economics. He has a solid position, too, as director of offshore outsourcing, a role he has held for six of the nine years he has worked in IT at a large East Coast technology company.

Now Pinto is adding one more accomplishment to his list: earning the certified outsourcing professional (COP) designation. He acknowledges that many people haven't yet heard of the certification, but he believes it's valuable nonetheless.

"It means you've obtained a certain level of expertise and your skills are transferable," says Pinto. "This differentiates you."

Industry leaders say IT outsourcing professionals need skills in technology, finance, law, negotiation, and project, change and performance management. They should also be able to work in various corporate environments and national cultures. Knowledge of Hindi or Chinese is a plus.

Because so few people have the combination of skills required to manage an outsourcing relationship, companies often assemble teams to negotiate, implement and oversee outsourcing deals, or they appoint inexperienced and unprepared workers to the job.

The new COP designation is one option for differentiating knowledgeable professionals working in outsourcing. Traditional educational institutions offer others. Carnegie Mellon University and the Stevens Institute of Technology, for example, have outsourcing management concentrations, and the Illinois Institute of Technology provides outsourcing management training for client corporations.

Many in the IT community say they're looking for these kinds of train-

Continued on page 40

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BODY OF KNOWLEDGE

According to the International Association of Outsourcing Professionals, certified outsourcing professionals have the following skills:

1. Defining and communicating outsourcing management practice.
2. Developing and managing an organization's end-to-end process for outsourcing.
3. Integrating outsourcing into an organization's business strategy.
4. Creating and leading outsourcing project teams.
5. Developing and communicating outsourcing business requirements.
6. Selecting outsourcing service providers.
7. Developing the financial analysis, and pricing an outsourcing opportunity.
8. Developing and negotiating the contract for an outsourcing agreement.
9. Managing the transition to an outsourced environment, including the effect on employees and communities.
10. Providing outsourcing governance.

Continued from page 38

ing and certification programs, says Christina Powers, director of association and professional development at the International Association of Outsourcing Professionals (IAOP) in New York. "Outsourcing used to be a Band-Aid and not a strategic move, but now it is [strategic], and companies are looking for people to lead their relationships with other companies," she says.

The New Certification

Michael F. Corbett, who has worked in outsourcing for about 15 years, started the IAOP in early 2005 in response to this need. "Everybody was talking about the disappointing results from outsourcing," he says.

Corbett, who now serves as the IAOP's executive director, says companies want professionals who can align outsourcing with the organization's overall strategy, identify the right opportunities for outsourcing, and structure and implement outsourcing arrangements.

The IAOP's goals including setting standards for the profession as well as recognizing experienced professionals via the COP designation.

Powers compares the certification with the more established project management professional designation awarded by the Project Management Institute. Like the PMP, the COP requires applicants to demonstrate experience and a thorough knowledge of the discipline. They must also have executive sponsorship.

Applicants need 150 points to earn certification, and at least 50 of those need to come from mapping their experience against a body of knowledge set by the IAOP's standards committee.

Applicants also can earn 75 points by taking the IAOP's four-day master's class. (Price tag: $3,500 for members, and $4,500 for nonmembers.)

In July, the IAOP announced that it had awarded the first COP designations to 13 professionals, who came from a various companies — including Johnson & Johnson, Bell Canada International Inc. and The Procter & Gamble Co. — and disciplines, such as pharmaceutical research and development, contract management and IT. This inaugural class also represented both sides of the outsourcing relationship: customer and service provider.

Powers says 10 more applications for certification are being reviewed, and hundreds of people have signed up for the Web-based seminars held twice a month to explain the new program.

William Metz, the external business development manager in business services and IT at P&G in Cincinnati, is among the first 13 COPs. Even though he has experience managing outsourcing relationships, Metz says he saw value in earning the COP. "You have to know and understand your competence in a particular area to understand how and where you can improve," he says.

> **"It means you've obtained a certain level of expertise and your skills are transferable. This differentiates you."**
>
> **GODFREY PINTO**, DIRECTOR OF OFFSHORE OUTSOURCING AT A LARGE TECHNOLOGY COMPANY

His executive sponsor, Carlos Amesquita, director of innovation for global business services at P&G, agrees. "For [employees], it provides something widely recognized outside of P&G. And for us, it's a way to benchmark that we're getting the best skills over time," says Amesquita.

Selling the Concept

Will other executives share Amesquita's view? Time will tell. Meanwhile, IAOP officials acknowledge that they have to market the organization as well as the designation. And even with those efforts under way, they say they expect the COP will take years to become an industry standard.

Joseph E. Hogan, vice president of strategic programs for outsourcing at Unisys Corp. in Blue Bell, Pa., is another member of the inaugural 13. He says he's surprised by the number of phone calls and e-mails he has received from colleagues, not only congratulating him on earning the COP designation, but also asking questions about it. Hogan says he tells them that the new certification recognizes people with the complex mix of skills required to successfully arrange and manage outsourcing relationships.

But he doesn't expect any immediate star power from his new designation. "In five to 10 years, it definitely should be a preferable qualification," Hogan says.

Others stress that any certification is only one arrow in a professional's quiver. "I would be hard-pressed to say certification would be required [by employers]. I always say it's not [just] your degree; it's your degree, your motivation and what you bring to the table. You can do that without certification," says Kate M. Kaiser, an associate professor of IT at Marquette University and coordinator for a recent Society for Information Management (SIM) study, "The Information Technology Workforce: Trends and Implications 2005-2008."

Even so, Kaiser lists outsourcing

Which Side Are You On?

THE BATTLE LINES seemed fixed in professor Christine V. Bullen's IT Outsourcing Governance class at the Stevens Institute of Technology. One student worked for a vendor, another lost her job to outsourcing, a third worked at a client company where his responsibilities increasingly involved managing the outsourcing relationships, and a fourth started the class with the attitude that outsourcing was bad. "I think he just wanted to come to complain," Bullen says.

But instead of prompting adversarial conversations, Bullen says the mix of students resulted in "wonderful class discussions."

The outsourcing management programs at the Stevens Institute of Technology, Carnegie Mellon University and the International Association of Outsourcing Professionals include a mix of students from both sides of the outsourcing relationship. While that approach initially might seem counterintuitive, considering that client companies and vendors have very different goals, instructors and students say the combination leads to insights that help workers do a better job.

For example, Godfrey Pinto, who recently earned the IAOP's certified outsourcing professional designation, found himself studying with two vendor-side professionals who willingly shared issues and concerns from their perspective. Pinto, a director of offshore outsourcing at a client company, says he found his classmates' discussion about how vendors are stemming the high attrition rate of overseas employees to be particularly helpful. He says it's the kind of information he can take back to his supervisors, who are concerned about the high turnover rates at offshore providers.

Bill Hefley, an associate professor at Carnegie Mellon, says it's important to have this mix in the classes because many workers will move between the two sides as outsourcing management matures. "The barrier is permeable," he explains. "So it's really important that people understand the other side as well."

– MARY K. PRATT

OUTSOURCING SYLLABUS

The IT outsourcing program at the Stevens Institute of Technology consists of four graduate courses:

IT OUTSOURCING GOVERNANCE: Pros, cons and day-to-day management, strategic decision-making, feasibility considerations, service-level management, dashboards, measuring and assessing value, project priorities, resource allocation, security and termination

LEGAL ISSUES IN IT OUTSOURCING: Contract negotiation, relationship management and measurement, regulation, offshore agreements and termination

RELATIONSHIP MANAGEMENT IN IT OUTSOURCING: Relationship management in the 21st century corporation

ORGANIZATION CHANGE AND DEVELOPMENT: Impact of outsourcing on organizations and policies, and approaches to mitigate negative reactions

management as one of the hot skills for IT workers. Discussing the mix of abilities required, she says, "To get that in one package is pretty rare."

The Degree Route

Consider the case of one financial company that sought such a person, says Christine V. Bullen, professor of information systems and director of the IT outsourcing program at the Stevens Institute of Technology in Hoboken, N.J.

"They were looking for the person who could walk on water in this area," says Bullen, who interviewed the company's CIO for a SIM study. After a year of searching, the CIO found the ideal person, she says. Problem was, everyone else wanted him, too. The CIO offered a high salary and signing bonuses, but the candidate was looking for additional concessions, such as more vacation time.

"I was amused that this person had this much power," Bullen says.

Stories like this — whose outcome Bullen was not privy to — led the Stevens Institute to introduce a new four-course concentration in outsourcing for graduate students in 2005. "We felt it was such an important area for management students," Bullen says.

So far, only about 25 of the school's 2,100 MSIS and MBA students have taken theses courses, and none has completed all four, but Bullen is not deterred. "As outsourcing increases, there [will] be more demand," she says.

The Illinois Institute of Technology in Chicago has also responded to the need for training in outsourcing management. Since 2004, the school has offered a strategic outsourcing program for corporations looking to train staffers.

"Outsourcing needs to be a core competency of the company," says Mark J. Power, adjunct professor and co-author of *The Outsourcing Handbook: How to Implement a Successful Outsourcing Process* (Kogan Page, 2006).

Carnegie Mellon last year introduced a concentration in service management as part of its full-time master's degree program in information systems management and its part-time master's program in IT. The courses cover IT program management, contracts, negotiations, service organization management, capability and process improvement, and sourcing management.

"Those are things you don't get in a hard-core technology program," says associate professor Bill Hefley, who is also associate director of Carnegie Mellon's IT Services Qualification Center.

Carnegie Mellon began offering the concentration after corporate executives at a 2004 symposium expressed a need for workers who could manage outsourcing relationships.

Hefley says the introduction of these kinds of courses and the COP designation show a maturation of outsourcing. He says there aren't enough trained and experienced workers to meet corporate demand, and even if there were, most companies wouldn't know what to do with them. Many companies keep people with these skills in old IT positions and just add responsibilities, he says. Or they put them in the procurement office.

But that's starting to change. Progressive companies are developing career paths for these professionals as more and more of them come to the table with experience and credentials, Hefley says.

"It's probably a good sign that people are asking, 'How are we going to train these people?' " he adds. "It shows there's an increasing national attention on servicing and the service economy." ◗

Pratt is a Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

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Transforming IT Management

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Political Correctness REVISITED

Well-intentioned sensitivity can stifle constructive engagement at work. Here's what you can do about it.

A white male IT manager fears he'll be perceived as racist if he gives critical feedback to a Latino developer. A female manager hesitates to seek coaching for fear of demonstrating she doesn't have the right stuff. The commitment to equity that underlies political correctness is a good thing, but what about the barriers it can pose to constructive, engaged work relationships? That's the smoldering issue explored in an article by **Robin J. Ely**, *Debra E. Meyerson and Martin N. Davidson in this month's* Harvard Business Review. *Ely, an associate professor of organizational behavior at Harvard Business School, talked with Kathleen Melymuka about the fear and resentment that political correctness can engender at work and what employees and managers can do about it.*

What's the downside of political correctness at work? There was a fantasy that if you could just learn all the rules, you would never get in trouble. But you can never learn all the rules. People have different sensibilities about what the rules are. So the downside is that people now feel hamstrung by these rules. The power-holders feel they have to tiptoe and that they will get in trouble no matter what they say. The underrepresented groups feel that they can't raise these issues because they will be seen as overly sensitive.

In the article, you tell fascinating stories of what you call "identity abrasions" that result from political correctness. Can you recall one? A VP is addressing a large meeting and he refers to a negotiation as akin to "Oriental torture." There's an immediate reaction in the audience from Asian-Americans and people with a heightened consciousness. It brings up all kinds of negative images, so there's an identity abrasion there.

A man confronts the VP after his presentation. The VP feels he's accused of being a racist. Now the VP has an identity abrasion.

Everybody's feeling defensive, and it's all running counter to their sense of themselves as good and worthy people.

How can people deal with these kinds of situations? When we experience an identity abrasion, we become defensive without really knowing what's going on. We draw conclusions, but we don't say anything and we don't learn anything. So not only is there no connection, we drive a wedge into the relationship with suspicion and fear, and it becomes difficult to work in that relationship.

When the identity abrasion is to a person in a dominant group, that person feels misunderstood as a racist or a sexist. Rather than getting defensive — "That's not who I am!" — another possibility would be to say, "I have a feeling that something happened there. Maybe I should just ask and get more information." You can get into a conversation where you can learn a lot about yourself, or you can stay isolated and you don't really learn.

On the other side, a classic identity abrasion is feedback from a colleague that I'm not very effective at some part of my job. I think, "What does he know? He can't see my competence because I'm a woman." So this feedback that could be taken very constructively becomes something to discount. Women and people of color don't often get good feedback, and when they do get it, they don't know how to understand it. Sometimes [a comment] is a result of stereotypes and sometimes it's not. But how can you know if you can't pursue it and have a conversation about it?

You offer several principles of engagement for handling identity abrasion constructively. The first is to pause. When you have that moment of "Uh, what just happened here?" it's often accompanied by a sense of fear or anger. We recommend that you just stop, because almost any time you react from that place, it's going to be destructive. Step back and take a moment or even a few days to get your emotions under control so you can engage constructively. It's hard to know when you're ready to do that, but ask yourself whether you want to learn something or to prove something.

The next principle is to connect. Go to the other person with the intention of creating a stronger relationship rather than proving, defending or teaching something. A lawyer's colleague tells an off-color joke at a meeting. She pauses and thinks, "I know this guy isn't a jerk; he didn't mean to be offensive." She starts to engage them in a conversation about their experiences when women first came into the firm. They all end up having a really interesting conversation in a situation where people could have come away feeling, "She's so sensitive!"

Talk about the need to question yourself. Our first interpretation of a situation is virtually never fully correct and very often self-serving and defensive. Being able to question your interpretation allows you to hear a different point of view about what happened and to learn. Otherwise, you're just looking for evidence to support your view.

You also suggest getting "genuine support." What makes it genuine? I recently went to a friend and said, "Help me see what I'm missing. This is what I think happened." And he said, "Here's my take." And it was the opposite story. I don't actually know what happened, but his view allows me to think, "I could be totally wrong here." That was genuine support. It wouldn't have been genuine if he'd said, "What a terrible thing for her to have done!" But it was genuine because he spun a really plausible story that got me open to learning.

The last principle is to shift your mind-set. It's a shift from "You need to change," to "What can I change?" How can you really come to a different point of view that allows you to engage with this person in a more constructive way? You can go into a conversation with all these ideas about how they need to change, but you can't change anyone. All you can do is change yourself. So even if they are 95% of the problem, you're probably some part of it. If you can look for that 5%, that's much more constructive. And that gives them space to do some of the work they need to do. ▸

TAKE THE LEAD

Robin J. Ely and her co-authors suggest the following ways that IT leaders can support and encourage their employees to confront identity abrasions constructively.

Create safety. Be candid and encourage candor, acknowledge your fallibility in cross-cultural interactions, state your belief that most people mean well, and ensure that well-intentioned actions are not punished. But swiftly and definitively repudiate intentional acts of harassment, such as hate e-mail directed against a particular group.

Be a role model. Respond nondefensively to questions and challenges, be aware of your own biases and emotional triggers, and openly rely on others to test the validity of your perspectives.

Seek out others' experience. Develop a deeper understanding of employees so you can better anticipate how they are likely to read situations and how you can respond effectively.

Foster people's investment in relationships. Create a context for people to have open conversations, encourage them, and provide support and time.

What Kind of IT Shop Are You Running?

Business executives tend to perceive IT in one of three ways, and those perceptions dictate what they expect of the CIO. **Here's a quiz to help you find out what they're thinking.**

BY LAURIE ORLOV

FROM THE OUTSIDE looking in, all IT organizations appear to have the same reason for being. But as a CIO, you should know that there is no one type of IT organization that's right for all companies and all industries. In some companies, IT *is* the business, while in others, IT is seen as quite separate from the business. Some organizations make IT investment a priority, but in others, driving IT costs down is key. Some IT groups invest in developing project managers and are all about innovation, while others focus on managing vendor contracts and spend little on R&D. And in some organizations, IT is highly regarded, while in others, it's viewed as a barrier to getting things done.

Amid all these differences, business demands and top management expectations dictate which type of IT is right for a company, and three clear archetypes for successful IT organizations emerge: the Solid Utility, the Trusted Supplier and the Partner Player.

Once the business executives have settled on one of these images, it often persists even when the bulk of IT activities are outsourced. Very large companies may have all three types represented in various divisions or business units.

As a CIO, if you are to effectively articulate IT strategy, dictate trade-offs and help your group operate more like a business, you and your bosses and customers must understand and agree on the IT model for your company.

Here's a quick quiz to help you better understand which archetype is right for your company. For each question, choose the answer that is closest to your experience. Tally the corresponding numbers for a final score.

Once you've got your archetype, you may want to consult the CIO to-do list at right, which will help you understand what your bosses are probably expecting of you. ›

Orlov is an analyst at Forrester Research Inc. Contact her at lorlov@forrester.com.

How does your company view the role of technology?

1. Infrastructure technology is critical; application criticality varies by business unit.
2. Technology is critical for enterprise functions such as sales, marketing and finance.
3. Technology is integral to go-to-market offerings.

What type of technology does your company require?

1. The standard for infrastructure excellence.
2. The standard for functional excellence.
3. Unique, for competitive advantage.

What type of visibility into IT does your company require?

1. Financial.
2. Functional department management.
3. Executive team.

How does your company view the mission of IT?

1. Keep the lights on.
2. Do the project right.
3. Achieve the company's mission.

8-12: Solid Utility
13-19: Trusted Supplier
20-24: Partner Player

How is IT funded in your company?

1. Charged or allocated back to business areas.
2. Budgeted as part of functional business unit budgets.
3. Budgeted within enterprise strategic planning process.

How is IT measured in your company?

1. Service-level agreements and availability, user-level satisfaction surveys and help desk responsiveness.
2. Functional (e.g., sales, finance) project scorecards.
3. All of the above, plus measures of direct contribution to revenue.

How is IT governance handled in your company?

1. Chief financial officer sponsors and approves; IT asset management.
2. Functional steering committee; project management office.
3. CEO/executive team sets IT agenda; IT portfolio management.

What is your company's IT architecture?

1. Technical architecture; infrastructure standardization.
2. Application architecture; application design standardization.
3. All of the above, plus business architecture and strategic road maps.

CIO To-Do List

As a CIO, your mission is closely tied to business executives' perception of IT. Here's what company executives probably expect of you, depending on which archetype they've chosen:

SOLID UTILITY

- Provide dial-tone reliability
- Find innovative ways to cut IT costs
- Monitor vendor performance and cost
- Effectively support back-office applications
- Achieve high scores on user satisfaction surveys

TRUSTED SUPPLIER

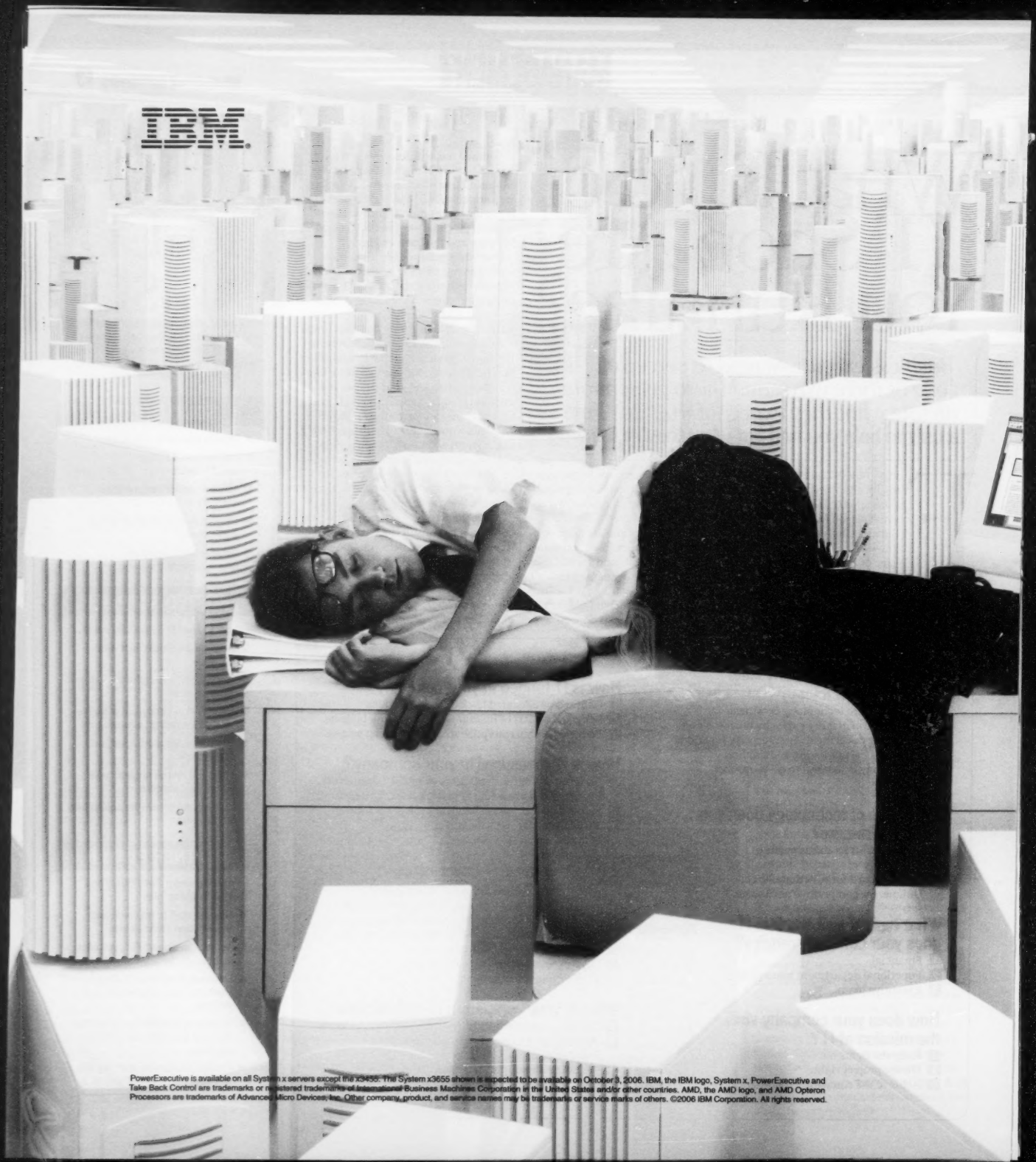
Everything under Solid Utility, plus . . .

- Evaluate and implement new software
- Standardize the application project business case
- Train staff in timely and effective application project management
- Recruit business analysis and design skills
- Audit and review projects with functional sponsors
- Refresh and renew the application architecture

PARTNER PLAYER

Everything under Solid Utility and Trusted Supplier, plus . . .

- Allocate staff to research and develop new technologies
- Recruit developers for customer technology design/integration
- Ensure that staff has a deep understanding of business and strategy
- Drive an enterprise architecture that can flex with competitive strategy
- Provide dashboard visibility into IT's effect on revenue and cost



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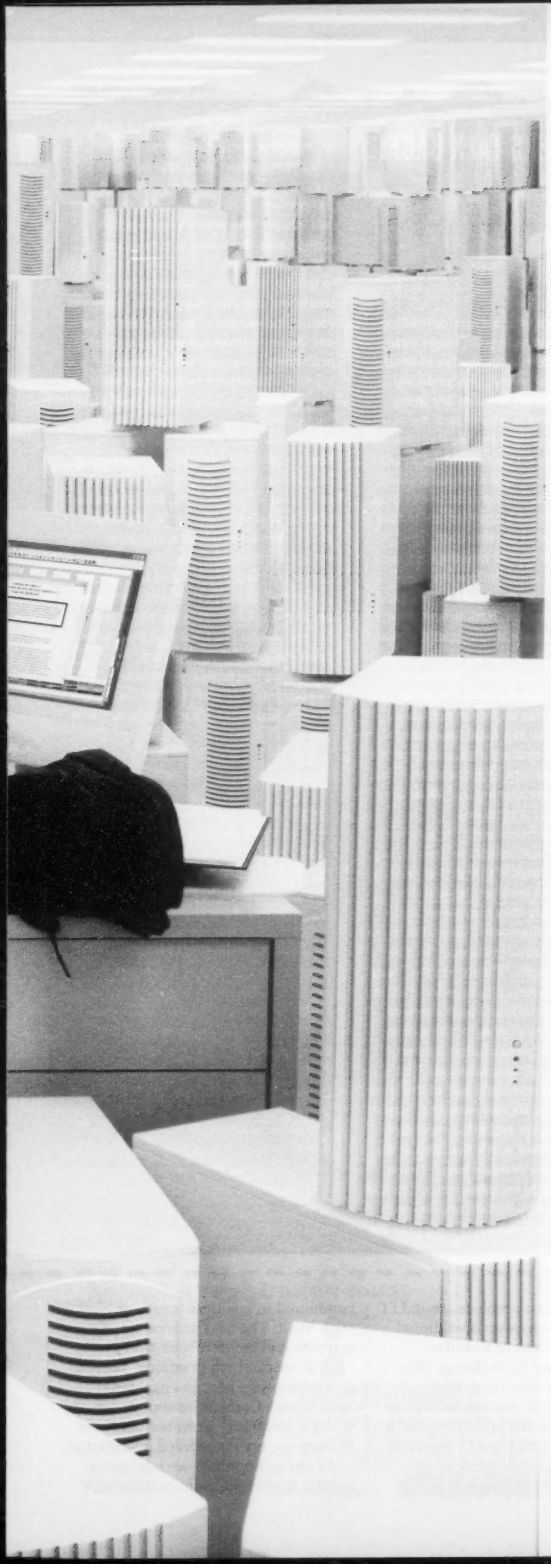


AMD 64 Opteron

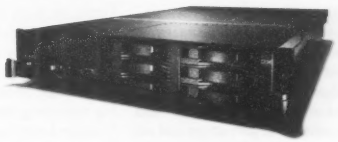
_INFRASTRUCTURE LOG

_DAY 28: These slow, inefficient boxes don't have enough power to run my high-end business apps. They can't do anything. Though I guess crashing counts as doing something.

_Need sleep. Will try to dream that I am I.T. King of a distant planet that only produces stupefyingly powerful servers.

_DAY 30: I've taken back control, thanks to the IBM System x™ server with the AMD Opteron™ Processor. It has more power and more efficiency than I ever imagined in a standards-based server. The PowerExecutive™ tool assigns power as needed for each server. It helps optimize our power consumption. Maximize performance. Increase reliability. I can finally sleep in my own bed again.

_I have taken back control. I am Ned, benevolent I.T. King of this...uh, data center.



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MANAGERS' FORUM

WITH PAUL OLEN

ADVICE

I hope this monthly column will provide a lively exchange of ideas with IT managers. I'll do my best to answer your questions, and some of your responses will run alongside in "Readers Talk Back."

PLEASE SEND YOUR QUESTIONS, COMMENTS AND CRITIQUES TO ME AT PGLEN@C2-CONSULTING.COM.

Q Why isn't IT considered "operations" at the senior levels of a company? When you look at a company, IT is generally considered to be a back office or a provider of pure support for the company, but not operational in nature. Most every IT organization I know of functions 24/7 and has a profound impact on the operations of a company if it isn't up and running. CIOs make operational decisions to take portions of the company down for major application installations, maintenance and sometimes security reasons, affecting huge portions of the company, customer operations, manufacturing and sales, and yet this isn't considered operations. Somehow, we need to start thinking of IT in terms of "critical operations," and it should be considered part of ops and not simply filling a support role like HR.

I'm assuming that your question is twofold: 1) Why isn't IT considered operations? and 2) What can we do to get senior managers to perceive it as such?

As for why, I can only speculate. I do recall recently reading about a survey that Gartner conducted in Europe a few years ago. It asked executives to rank all the C-level people in their companies according to whom they considered to be the most influential players. Not surprisingly, it found that they considered CIOs to be the second-least-influential players. Only human resources directors were considered less central.

So here are my guesses as to what's wrong:

1. **A lack of personal relationships between CIOs and other C-level executives.** I'd guess that the fact that CIOs are not perceived as influential has more to do with interpersonal relations than rational reasoning. Let's face it: Most CIOs come up through the geek ranks. Early in their careers, they chose to work on technology, and they generally have personalities more like introverted engineers than backslapping salespeople. While they can have productive and professional relationships at the C level, they are often not "in the club" and may not know how to be — or even want to be.

2. **A perceived lack of business savvy among CIOs and others in IT.** Another reason is probably the frustration that executives feel when they believe that IT people don't understand the business and/or share their priorities. When they feel impeded by process, they think that we don't get it.

3. **The history of IT.** IT has crept into the heart of most organizations over a very long time. When today's CEOs started their careers, Wang word processors really weren't key operational equipment. Their attitudes may still reflect their early experiences.

4. **A misunderstanding of IT among other senior executives.** Although most executives think of IT as important, they probably don't understand how pervasive it is. Unless the competitive advantage of the business revolves around IT, it's just not as obvious an operational component as trucks or forklifts.

So, what can we do to change this perception? Here are a few ideas:

1. Invite up-and-coming managers from other functional areas to spend a year or two working in an IT position.

2. Ensure that communication with all levels of the business is conducted in business language.

3. Wait. The next generation of executives will be more tech-savvy.

4. Lower our expectations. Many critical services are not considered operational. Companies shut down without electricity or water, but these utilities are not considered operational.

So, try as we might, we may never get the respect we want or deserve.

READERS TALK BACK

More on Conducting Performance Reviews

I used to share your view on spreading out reviews over the year. I have now flipped and have become a fan of focal reviews, where everyone is reviewed at the same time. My reasons are these:

1. Yes, there is a busy time for managers in getting the focal reviews done, but they know about it far in advance. If you set up a well-understood and well-administered schedule to help them, that process can start up to two months ahead of the due date. The manager then has 10 months (at least) free of worry about formal reviews. That's not to say he should forget about the review process. Rather, the review file should be built throughout the year, and notable performance events should be handled immediately. Nothing in this regard changes for the manager or individual in this approach compared with yours. But the focal approach does free the manager for a long period from daily concern about reviews (i.e., Which ones are coming up? What are the due dates? and so on).

2. My experience with the approach of spreading out reviews related to, say, anniversary dates is that you ultimately have the same problems as with the focal approach; they may be smaller, but you have them more often. Let's say you have two reviews due by the end of the month. "Plenty of time," you think (if you've even remembered them or your HR department has reminded you). Then, any number of things can come up, and human nature and procrastination can also take over – let's face it, doing reviews is one of the least favorite things for any manager, maybe even more so for technical managers. Before you know it, it's the 29th of the month, and the reviews haven't even been started. In my experience, I've had more problems with late reviews with the anniversary-date approach than the focal approach. That's been true both for myself and my managers.

3. When doing focal reviews, you are dealing with a level playing field. You are forced to look at all of the staffers and the entire year together at the same time. And you have your entire salary budget (or most of it) in front of you. The chances of equal treatment are thus maximized, whether your company does "force ranking" or not. Again, human nature and budget processes can easily take over using the anniversary-review approach. Those reviewed earlier in the year often come off better, because most of us don't think to save some ratings and some money for the stars coming up in December. That's a long way off, and we'll deal with that then. And at the beginning of the budget cycle, we maybe didn't even know about a star who emerged during the year. Again, it's easier for the manager and for the employee to be able to deal with everyone at the same time, with the same pots of ratings and money to hand out based upon the same review period.

I realize this is an arguable thing. But I've become a convert to the focal approach, and these are my reasons. – P.W.

In this case, I think that we'll have to agree to disagree. I see your points, but some of the things you mention are exactly the reasons that I don't like simultaneous reviews.

1. I don't think that it's good to give managers 10 months free of reviews. They should have to think about it more often. Developing people should be a big part of the job. As a manager, I liked the rhythm of monthly batches. Ten months is long enough to become inarticulate about expressing expectations.

2. Deadlines will always be a problem, whether doing reviews once or 12 times a year.

3. Forcing a manager to level the playing field all the time helps him do it better than forcing him only once a year. It's just a matter of practice. My 12-competencies model grew out of having to be articulate in reviews. Had I done it once a year, I'm sure that I wouldn't have been able to express that.

– PAUL OLEN

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9:20am to 10:00am	**Application Performance at the Career Education Corporation: An End User Case Study** Mark Griesbaum, Chief Information Officer, Career Education Corporation
10:00am to 10:15am	**Refreshment and Networking Break**
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11:25am to Noon	**Panel Discussion** Moderator: Ron Milton, Executive Vice President, Computerworld Panelists: Mark Griesbaum, Chief Information Officer, Career Education Corporation; Neil Hampshire, Senior IT Director – Americas & Leadership Center, Wm. Wrigley Jr. Company; Ken Speller, QA Director, Chicago Board of Trade

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EXEC TRACK

KPMG Appoints Campbell Global CIO

STUART V.M. CAMPBELL, global managing partner of KPMG's Audit & Advisory Services Center in Montvale, N.J., has assumed the additional role of global CIO for KPMG International, which provides audit, tax and advisory services. Campbell began his career with KPMG in 1974. He left the company in 1990 to join Wells Fargo & Co. as executive vice president and general auditor but rejoined KPMG in 1995.

Qwest Hires Varma

Qwest Communications International Inc. in Denver announced the appointment of GIRISH K. VARMA as vice president and CIO. Most recently, he was vice president of the global applications services and telecommunications center of competency at IBM. Previously, he served in technical leadership roles at Bell Labs and AT&T, where he became vice president of service management systems and CIO. Varma replaces Balan Nair, who left Qwest in June to serve as CIO and vice president of technology operations at AOL LLC.

Kansas City's CIO Moves to Raleigh

GAIL ROPER, CIO for the city of Kansas City, Mo., has resigned to take a job as CIO for Raleigh, N.C. Before working for Kansas City, Roper worked in IT for the city of Austin and the Texas Department of Commerce.

NCR Places Chow In New CTO Position

NCR Corp. in Dayton, Ohio, has appointed ALAN CHOW to the newly created position of chief technology officer. He will be responsible for research and development for NCR's financial self-service, retail store automation and customer services divisions and for leading a cross-business unit product management team for NCR's broader self-service business. Most recently, Chow was vice president of NCR's payment solutions group.

BARBARA GOMOLSKI

IT at the Crossroads

IN THE NEXT 15 YEARS, there will be unprecedented opportunities to exploit IT for competitive advantage.

In the next 15 years, IT really won't matter, and organizations will spend as little as possible in this area.

Which is it? Unfortunately, many organizations are behaving as if the latter statement were true. And many IT groups are allowing them to do so.

The problem is not that businesses and other organizations have hit the wall in terms of their ability to use IT strategically. On the contrary, most are in the midst of enormous opportunities for IT-enabled improvements. However, the traditional view of IT as a mechanism for supporting and improving existing business processes is constraining the use of — and the creative investment in — IT.

BARBARA GOMOLSKI, a former *Computerworld* reporter, is a vice president at Gartner Inc., where she focuses on IT financial management. Contact her at **barbgomolski@yahoo.com**.

If things continue as they are, the IT group is likely to be minimized, squeezed and relegated to the role of keeper of the "IT utility." Similarly, IT managers who continue to define themselves in terms of their ability to manage technology will see their credibility and worth to the organization erode. (This is already happening in many companies today.)

This gloomy fate is not inevitable, however. IT groups can evolve and play a key role in the future success of their companies. But the transformation necessary to do so will require hard work and a clear understanding of how organizations need to use IT going forward. And not all IT groups or individuals will find places in the future.

Some organizations — particularly those in research and academia — are a step ahead. They anticipate that IT will play a significant role in the future. In fact, many scientific communities have already described their long-term IT needs in reports, papers and presentations.

For example, in its provocative mission statement, the National Institute of General Medical Sciences says this: In 10 years, "we want every person involved in the biomedical enterprise to have at their fingertips through their keyboard instant access to all the data sources, analysis tools, modeling tools, visualization tools and interpretative materials necessary to do their jobs with no inefficiencies in computation."

In 20 years, the institute says, "we want intelligent computational agents to do complex query and modeling tasks in the biomedical computing environment, freeing humans for creative hypothesis construction and high-level analysis and interpretation."

That kind of road map should get your motor running.

The business world has been less farsighted in identifying its long-term IT needs, however. In truth, most business managers are bogged down with day-to-day operations and short-term goals. Getting them to do any long-term planning can be a challenge. Nevertheless, it is imperative that businesses consider their goals and the kind of technology that will be required to meet them.

When I look ahead 10 to 15 years, I see a vastly different set of business expectations for IT. Today, those are largely centered around supporting revenue growth and lowering the cost of doing business. But in the coming years, there will be many new opportunities for organizations to exploit IT for competitive advantage.

For example, IT will be a key component in organizational innovation in industries such as biotech, manufacturing and engineering. In financial services, IT will provide myriad new opportunities in the areas of analytics and informatics.

In short, there are a host of expectations for IT on the part of the business, but they are seldom well defined. As expectations are clarified, new opportunities will arise for IT organizations, and new roles will be created, such as bioinformaticist, digital library specialist, human-computer interface designer, Internet multilinguist, AI expert and cybersecurity expert.

Of course, organizations will continue to look to IT for reliable and low-cost infrastructure services. They will also expect the IT group to continue to drive improved organizational efficiency and business process optimization. These traditional tasks will be augmented, however, with a host of new requirements that will vary depending on the industry in which the organization operates.

As a result, the IT organization of the future will not be a single department. In fact, it will be called different things in different organizations. There will be no boilerplate that businesses can follow in preparing for the future, nor will there be an organizational template for all IT organizations to use.

What's IT to do? There are two key areas where a forward-thinking IT group should focus: strategic change — including architecture, business process management and change management — and innovation.

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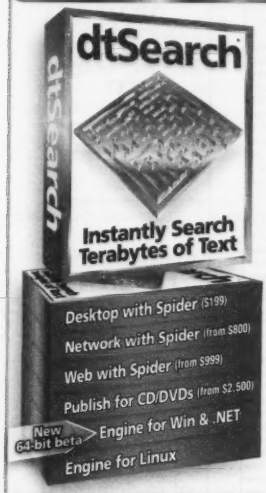
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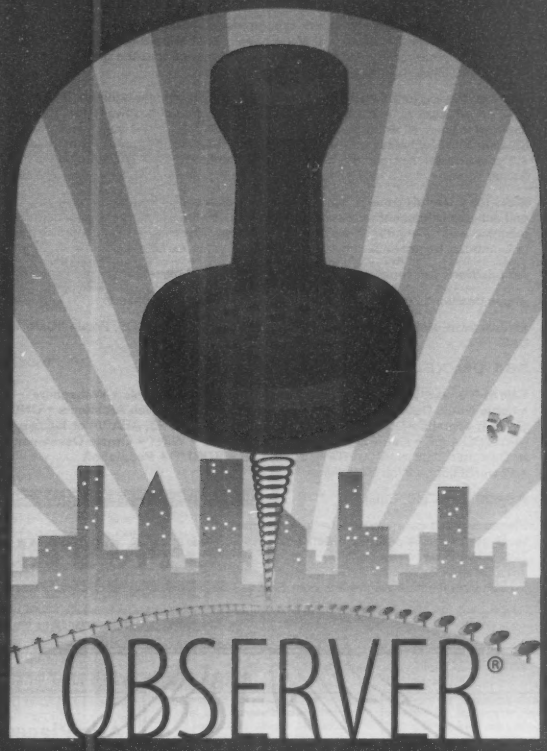

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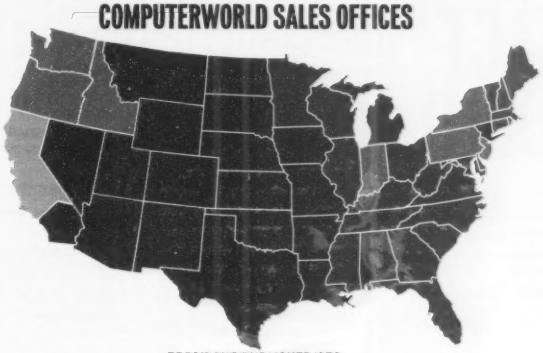

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Opinions

CONTRIBUTING COLUMNISTS

Michael Gartenberg, Paul Glen, Barbara Gomolski, John Halamka, Thornton A. May, Curt Monash, David Moschella, Bart Perkins, Virginia Robbins, Bruce A. Stewart

CONTRIBUTING WRITERS

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TELEPHONE/FAX

Main phone number (508) 879-0700
All editors unless otherwise noted below
Main fax number (508) 875-8931
24-hour news tip line (508) 620-7716

E-MAIL

- Our Web address is www.computerworld.com.
- Staff members' e-mail follows this form: firstname_lastname@computerworld.com.
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Google

systems throughout Sun and has advised many customers on its deployment.

Worrall said that Google runs a "significant amount" of Solaris in its data centers and is one of a number of customers "excited about the possibility" of installing more Sun servers based on Advanced Micro Devices Inc.'s Opteron processors and running some version of open-source Solaris.

Sources, including Sun, said that the list of Solaris 10 users also includes eBay Inc., which touts its use of the open-source operating system on its Web site, Yahoo Inc., Vonage Holdings Corp., Wal-Mart.com USA LLC, Disney Mobile, Reuters Group PLC and Bear, Stearns & Co.

Sources outside Google of said that its servers currently run a stripped-down version of Red Hat Linux that has been modified by the company's engineers. A Solaris systems administrator who recently interviewed for a job at Google said that he was told by employees there that the search engine vendor plans to create and test its own modified version of OpenSolaris.

Stephen Arnold, a technology consultant and author of *The Google Legacy*, said that he is "100% certain that there are literally dozens of people horsing around with OpenSolaris inside Google."

Switching to OpenSolaris would be a natural move for Google, which has a large number of former Sun employees and is striving to push the performance of its data centers, Arnold said. But he added that he doubts Google is widely deploying OpenSolaris yet. "Will it quickly replace Linux anytime soon? No," he said.

The growth of Solaris since its unveiling as an open-source offering some 15 months ago is seen by some as a sign of resurgence for the nearly 20-year-old operating system.

According to Sun, more than 5 million users have registered to use Solaris 10 since its release in January 2005, a figure that includes those paying Sun for support and those using it for free. And market researcher IDC said that Sun's share of the server market rose to 12.9% in the second quarter of this year, up from 11.2% a year earlier.

OpenSolaris community Web site OpenSolaris.org says it has 15,600 registered members, 10% of whom are Sun employees.

Meanwhile, a number of organizations are well into open-source Solaris implementation projects.

"Before, you had to be a big Sun customer and sign a lot of [nondisclosure agreements] to beta-test Solaris," said Dale Ghent, a systems administrator at the University of Maryland at Baltimore. Ghent is in the process of moving 30 servers off of Red Hat Enterprise Linux to Solaris. "Being able to test Solaris Express early gave us a psychological level of assurance," he said.

Some users are even embracing Solaris Express for production tasks.

Last year, for example, San Anselmo, Calif.-based Web-hosting provider Joyent Inc. moved hundreds of servers and nearly 100TB of data onto Solaris Express and off of FreeBSD Unix and SUSE Linux open-source implementations.

Joyent Chief Technology Officer Jason Hoffman said the move boosted his data center's performance while cutting costs and system crashes. ▸

OpenSolaris Terms

- **OpenSolaris:** The open-source project around the Solaris operating system that was launched in June 2005.
- **Solaris 10:** The latest commercially supported open-source Solaris version from Sun.
- **Solaris Express:** Another free version of Solaris, with the latest features from open-source contributors and Sun engineers; aimed at developers.
- **SchilliX:** The first third-party Solaris distribution; can be booted from a CD for easier testing.
- **Nexenta:** Another third-party Solaris distribution, noteworthy for featuring an Ubuntu Linux user interface on top of the Solaris kernel.

New Sun CIO Readies Massive ERP Consolidation

Bob Worrall was promoted to CIO of Sun Microsystems six weeks ago, filling a vacancy that arose when Bill Vass was named president and chief operating officer of Sun Microsystems Federal Inc. in July. Worrall, 45, had been vice president of IT. In an interview with *Computerworld* last week, Worrall talked about Sun's massive three-year ERP consolidation plans, as well as the advantages of letting employees telecommute.

Besides the day-to-day work of keeping Sun up and running, what projects are you overseeing? Certainly, the No. 1 continuing effort is the Integrated Business Information Solution [IBIS] project, where we are replacing 1,000 applications with a single instance of Oracle. It's just huge, and it's really gripping the company across the world. I have several hundred people working on the project. The first big deliverable is next July, when we will go live with our services and price-quotation systems. That will be followed closely by establishing our general ledger.

Historically, we've refreshed our hardware every three to five years, but that's been stretched out over the last several years because of the business environment. With IBIS, we are doing a complete refresh and consolidating servers onto a combination of UltraSparc and x64 servers, with x64 on the front end. We save money and save energy using servers with low-power processors.

Do you plan to run the IBIS software on a grid? It's an ongoing debate we're having. If the world were in perfect alignment, IBIS would be gridded. But to be frank, there are no serious references of Oracle running in a gridded environment that supports 40,000 users. We'll be using a more traditional [Sun Fire] E25K platform, which is a big Sun server running in the back room with small, thin x64 Web servers on the front end. We do have Oracle running on a grid in a nonproduction environment. So we know technically how it works.

How widespread is the use of open-source Solaris Express, the runtime version of Open Solaris, in Sun's IT operation? Since the earliest days of Solaris Express, we have followed [the developers'] delivery schedule and rolled it out as soon as possible. We provide feedback directly to engineering and catch bugs before the customers do. We always deploy it into production somewhere, either in an engineering lab or a campus environment or even a data center. It all depends on what the engineers want to validate. We also help make sure the user documentation and installation scripts work well. Our engineers are focused on the operating system, not how Fortune 1,000 companies use it. We can provide the operational perspective.

How big is telecommuting at Sun? It is huge. We have about 15,000 to 20,000 employees who are flexible workers, meaning they don't have fixed offices anymore. We have many employees using Sun Ray thin clients at home. The advantage is that there's no local data, so you don't worry about data being hijacked, and the units are all easily replaceable.

We also have an "office hoteling" notion, meaning you reserve an office as you need one. Our employee surveys show that [having flextime options] is always the top or second-biggest reason why people continue to work at Sun. We've even received kudos for how this could help us prepare for something like the avian flu pandemic or a natural disaster. We can now upgrade our VPN gateway in a matter of days so that everyone can work from home if necessary.

– ERIC LAI

Corrections

THE LAST NAME of Harvey Reed, chief engineer for the U.S. Air Force's Global Combat Support System program, was misspelled in a story about service-oriented architectures ("SOA Upends Development Traditions") that ran in last week's News section.

THE MAKER of FactoryCAD, a design tool for creating models of factories, was misidentified in the Sept. 11 cover story on General Motors Corp.'s use of 3-D technology to design and construct new auto plants ("Virtual Building Blocks"). FactoryCAD is developed by UGS Corp. in Plano, Texas.

THE NUMBER of hotel properties that are owned and operated by Accor North America was misstated in a story on protecting corporate databases ("Building Up Database Defenses") that was published in the Aug. 28 Technology section. The Carrollton, Texas-based company has 1,200 properties in the U.S., Canada and Mexico.

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FRANK HAYES ■ FRANKLY SPEAKING

Control Charlie

MAYBE we've been going about IT security the wrong way. Security guru Bruce Schneier thinks so. Last week at the Hack in the Box conference in Kuala Lumpur, Malaysia, Schneier told the crowd that technical security measures have proved to be not enough — it's time to apply economic pressure. For example, banks will only get serious about identity theft if they're legally liable for unauthorized withdrawals, and software vendors will take security seriously only when they can be sued for loss because of buggy software.

"Look for the economic levers," Schneier said. "If you get the economic levers right, the technology will work. If you get the economics wrong, the technology will never work.

"The organization that has the capability to mitigate the risk needs to be responsible for the risk."

Should software vendors pick up the tab when they botch their products? Probably — but don't hold your breath waiting for that to happen.

On the other hand, maybe there's another way for corporate IT shops to use the same principle. Consider the security troubles we have because of users who engage in risky behavior like opening unknown e-mail attachments or visiting dangerous Web neighborhoods. We tell them not to do it, but they "forget." Their managers won't crack the whip because that's more trouble than it's worth — at least for them.

So there are no consequences for the risky actions of those problem users. And we keep beating our brains out to save them from themselves, clean up after them and keep all our systems working as smoothly and invisibly as possible.

But suppose we tried something different. Say that instead of handling security problems invisibly, we made them highly visible to users.

Suppose when one of those problem users opened a virus-laden attachment or triggered a firewall reaction or plugged a thumb drive into a USB port, that didn't just create an entry in a security log.

Suppose it instantly shut down network access for the user's entire workgroup.

Oh, there would be screams. We'd hear them at the help desk almost immediately. And for once, those battered souls would know exactly, word for word, what to say: "It looks like Charlie downloaded a virus, and your group was cut off to protect the rest of the network. We're working to clear the problem now."

Not "We cut off your network because" — that makes it sound like it's IT's decision. And not "Because there was some problem with someone" — we want Charlie's fellow users to know exactly who has cut them off.

Is that sneaky? Sure. Draconian? It has to be. It will work only if the consequences are immediate and — at least to all appearances — automatic. (Just how automatic it actually is will be up to IT.)

And effective? Just ask yourself this: How long will it be before Charlie's co-workers start screaming at *him* every time there's a network problem? They'll be far more effective at changing Charlie's risky behavior than anyone in IT will ever be.

Look, we've been piling security technology onto our systems and networks for years. But Schneier is right. It's not enough. It'll never be enough. We can barely hold our own against hardware problems and external attackers. And as long as we keep struggling to hide the consequences of what some problem users do, they'll keep doing it — and keep putting everyone at risk.

By turning that situation inside out and making those consequences very visible, we may be able to get the rest of our users to accomplish what we can't. They may not care one way or another about security problems, but they know what they don't like. And we can make sure they know who to blame.

We've got the technology. And we know who has the leverage to get those Charlies under control.

Maybe it's time to start pulling those levers. ▸

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com.**

It's All About U, Isn't It?

Manager pages pilot fish before he even gets to his desk: There's an important meeting in the conference room, and the PC there isn't working. As fish arrives, manager jumps up, keyboard in hand, punching the Enter key to show that the screen isn't responding. Fish sees the keyboard's dangling cable and – painfully aware of the roomful of bigwigs present – tries to quietly point out that the keyboard works better when plugged in to the machine. Manager's loud response: "I disconnected it to plug in my thumb drive, but that shouldn't matter because the keyboard is USB, and the PC should always know how to run it. The 'u' stands for *universal*!"

SHARK TANK

Stuck

This big hospital keeps updated copies of electronic patient records on a "downtime PC" at each nursing station, in case there's a network problem. But one nursing manager tells this IT pilot fish that her downtime PC isn't getting the records. Fish tracks down the designated PC, and all patient reports are present and updated – but the alert-orange "Downtime PC" sticker is missing. "That's not our downtime PC," manager tells fish. "It's over there." She points across the nursing unit. Did IT relocate the workstation? fish asks. "No," manager replies. "We just moved the orange sticker."

Eight the Hard Way

Pilot fish wants to demo some software for co-workers at two locations, and she knows just how to do it: having them share her workstation screen using remote-control software. "For hours, I tried to figure out how to have eight of us remote into my machine while on a conference call with me," says fish. "I drove all my co-workers crazy with all my interruptions. And when I couldn't get it to work, I harassed help desk staffers, asking them to make it work. Then a non-IT staffer asked me, 'How about using the teleconference room and sharing your screen with both locations?' OK, I felt pretty stupid."

Question Time

Network tech pilot fish calls vendor support line for help with a router but discovers that only one person is authorized for support calls: fish's laid-off predecessor. Fish: "He's no longer here. How can I get support?" Support guy: "Well, I have answers to security questions." Fish: "I'd say this is standard for some of our own security. What are the questions?" Support: "We don't have any questions – just answers." Fish: "OK, give me an answer and I'll provide the right question."

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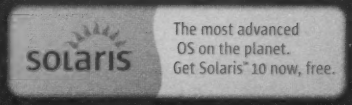

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